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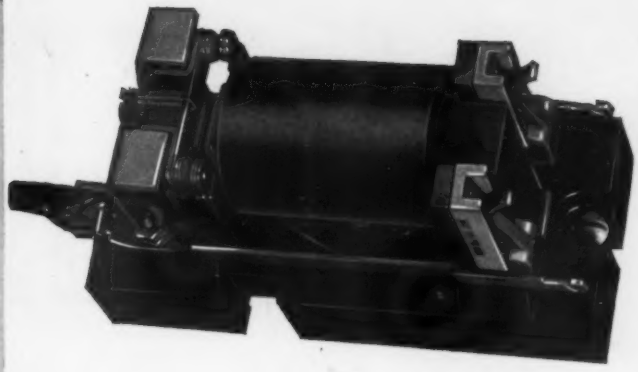

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TELEPHONY

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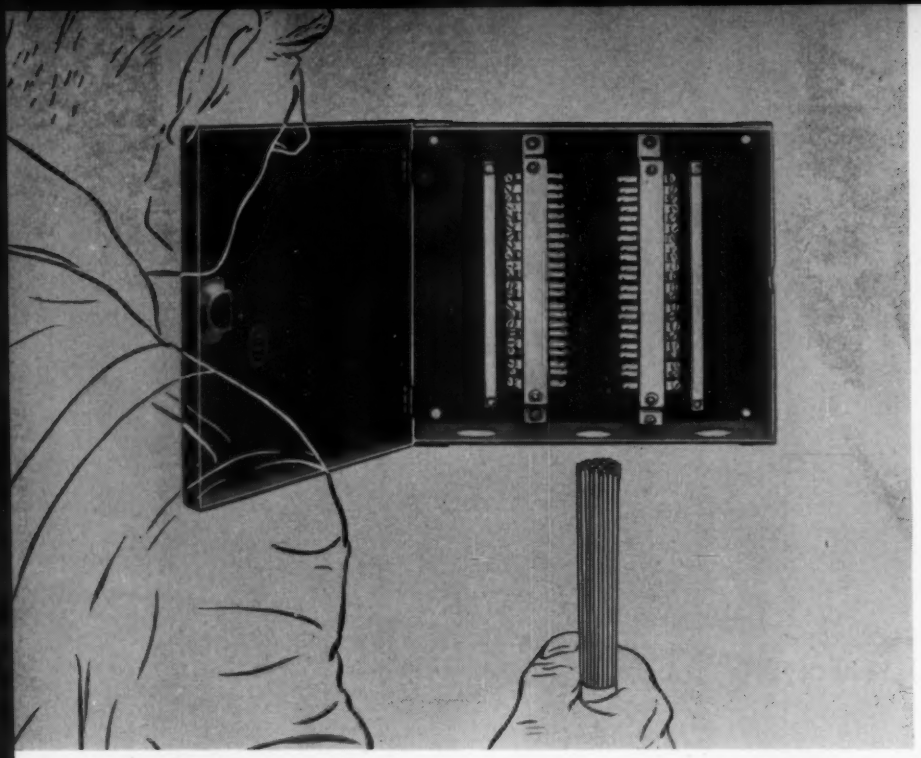

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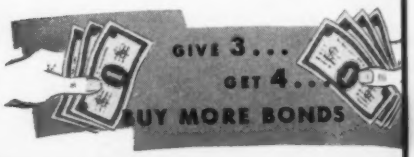

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ELECTRON TUBES—THEIR USE

In the Telephone Industry

By GEORGE O. TAPPER

PART I

THERE is every probability that electronics will be more extensively used and have a broader application in the telephone industry after the war than ever before. The average text book on this subject is highly mathematical. Long and complicated formulas may be appropriate for use in the laboratory but they are usually out of place in the hands of the average practical telephone man. There is no need of calculating results within a fraction of 1 per cent when the tubes used may vary 20 per cent or more in an average production run. This series of articles will cover electronics from a communication man's viewpoint and will provide all information ordinarily required by the telephone industry without resorting to complicated and confusing mathematics.

Vacuum tubes, radio tubes, electron tubes, thermionic valves or whatever you may call them are used extensively in the telephone field. Some of the principal uses are:

(1) Battery chargers and eliminators;

(2) Telephone repeaters;

(3) Telephone and telegraph carrier systems;

(4) Amplifying telephones for subscribers with impaired hearing;

(5) Transmission measuring and testing equipment;

(6) Loudspeaking interphone systems;

(7) Paging systems;

(8) Equipment for recording telephone conversations;

(9) Centralized service observing equipment and other low loss monitoring equipment;

(10) Conference circuits;

(11) Alarm and other miscellaneous circuits.

Even though the telephone industry was one of the first users of electron tubes, many telephone men have not worked with these devices enough to remember how they function. As increased use of electronic devices is forecast for the postwar period, perhaps an informal "refresher" course will be helpful. This series of articles is intended for a telephone man's viewpoint; therefore strictly radio frequency considerations will be omitted.

Current flowing along a wire is usually considered as a movement or stream of negative charges of electricity called electrons. The larger the value of the electric current, the larger is the number of electrons passing by in a given time. If it is desired to control the direction of the current, a

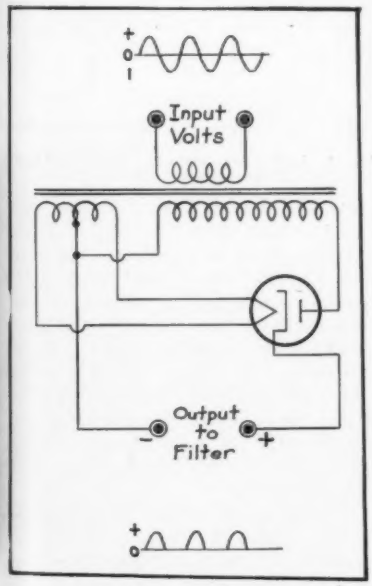


FIG. 1. Half-wave rectifier.

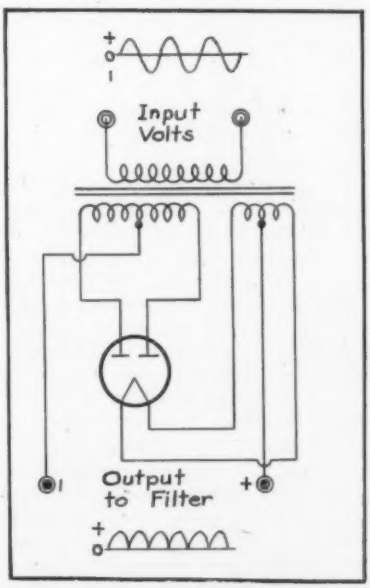


FIG. 2. Full-wave rectifier.

vacuum gap or space inclosed in a glass or metal tube may be inserted in the circuit. The stream of electrons is caused to travel across the space in only one direction from one electrode called a cathode to another electrode known as the anode, or plate. Such an electron tube is called a *diode*, the family name for two-electrode tubes.

When the cathode is heated, the speed of the electrons is increased sufficiently

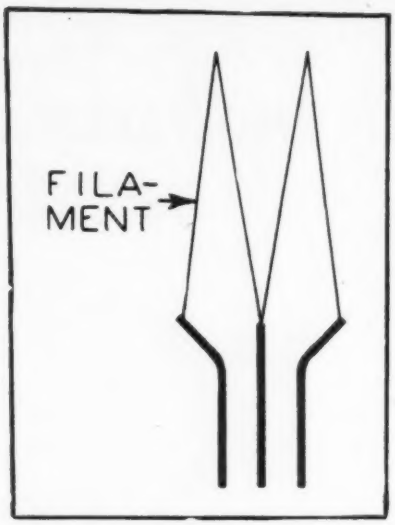


FIG. 3. Filament type cathode. (Courtesy, Radio Corporation of America.)

to cause them to break away from the surface of the cathode. This is called *thermionic emission*. A positive potential on the plate attracts these negative charges, known as electrons, and thereby causes their journey across the space to be completed. If the potential on the plate changes to negative, it will repel the electrons from the cathode, and as the plate is not heated, electrons will not leave its surface and attempt to cross over to the cathode. This arrangement allows current to flow in only one direction, therefore it can be used as a rectifier.

Fig. 1 shows a circuit of a half-wave rectifier and *Fig. 2*, a full-wave rectifier. When tracing the circuits, it should be understood that in the electronic theory of electricity, the electronic stream or current is considered as flowing from negative to positive. A negative charge is considered as having an excess of electrons and a positive charge as having a deficiency of electrons; therefore, our old friend, the law of supply and demand, causes a flow from a negatively charged body to a positively charged body. In *Fig. 1*, when the upper end of the transformer is positive, the negative charges from the cathode travel across the space to the plate, then through the transformer secondary winding to the negative end, through the external circuit and back to the cathode. No current flows when the plate is negative. *Fig. 2* combines two half-wave tubes into one full-wave tube. As the two plates are connected to opposite ends of the transformer secondary, one of the plates is positive during each half of the AC input wave; therefore, current will flow in the output circuit during both halves of the AC input wave. Even though this tube has four electrodes, it is considered a diode because it consists of two diode units in one envelope. Two separate half-wave tubes may be used in place of one full-wave tube. Full-wave rectifiers are used in connection with communication equipment due to the smoother output.

Fig. 3 illustrates a directly heated cathode known as the "filament type." This type requires comparatively little heating power, being used in almost all tubes for battery operation because it is, of course, desirable to impose as small a drain as possible.

Fig. 4 illustrates an indirectly heated cathode, known as the "heater type." This type consists of a metal sleeve (the cathode) and a heater filament located inside the sleeve. Because the heater filament is insulated from the cathode, this type is well suited for utilizing AC current for heating the filament which in turn heats the cathode. As this assembly has more mass than the directly heated filament type cathode, it will not cool down as much at the zero points of the AC filament current; therefore, the tendency for an AC hum in the tube output is reduced. The metal sleeve cathode also acts as a shield to prevent the electric field produced by the filament current from introducing an AC hum. In *Fig. 4* the filament shown is arranged in a reverse helix for the purpose of reducing the AC hum due to the magnetic effect of the filament current just as telephone lines are transposed to reduce magnetic pickup.

Both types of cathodes usually are coated with a substance which will liberate electrons at moderate temperature; therefore, filaments may be operated at a low temperature (dull red) or a moderate temperature (a bright yellow) instead of the high temperature (a dazzling white) required for a pure tungsten filament cathode. Electrical current is used to heat the cathodes because it is a convenient method; however, other methods could be used.

Some of the electrons emitted by the cathode do not reach the plate. Some return to the cathode and some remain in the space between the cathode and plate for a brief period to cause an effect known as a *space charge*. This negative space-charge repels other electrons which leave or attempt to leave the cathode and thereby decreases the tube output. One method of overcoming the space charge is to raise the positive potential of the plate high enough to attract practically all the electrons to the plate. When most of the electrons emitted by the cathode are attracted to the plate, further increases in plate voltage have little effect.

If the temperature of the cathode is increased, more electrons will be emitted and then, of course, a further increase in plate voltage will increase the current flow. However, excessive cathode temperature will injure the electron-emitting property of the cathode due to the evaporation of the active coating of the cathode or result in the destruction of the filament. The maximum current is called the *saturation current*, and because it is an indication of the total number of electrons emitted, it is also known as the *emission current*, or, simply, *emission*. Tubes should not be tested or operated at the maximum current as this will result in a shorter useful life.

If the space charge is not present to

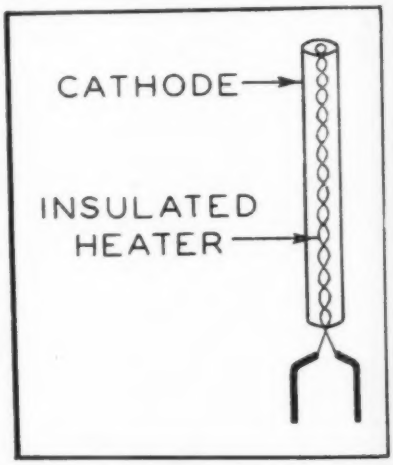


FIG. 4. Heater type cathode. (Courtesy, Radio Corporation of America.)

repel electrons coming from the cathode, the same plate current (or output current) could be produced at a lower plate voltage. The effect of space charge can be made small by making the distance between the cathode and plate small. The effect of an electric field decreases as the square of the distance increases; therefore, if the distance between the plate and cathode is reduced, the effect of the plate electric field at the surface of the cathode is greatly increased.

It is necessary to have a high vacuum in such tubes to prevent arcing between the electrodes. Heater type cathodes are used when close spacing between the cathode and plate is desired,

this due to mechanical reasons. The voltage drop between the cathode and plate of a typical tube of this type will be about 30 volts at 20 per cent load to 90 volts at 100 per cent, such a tube having an output of 200 milliamperes at 400 volts. Without close spacing of the electrodes, the internal voltage drop would be about double.

Still another method of reducing the opposition to the flow of current offered by the space charge is to put a small amount of mercury into the tube. The mercury is partially vaporized when the tube is operated; therefore, this tube is called a mercury-vapor tube. The mercury-vapor consists of mercury atoms. These atoms are bombarded by the electrons moving from the cathode to the plate. Due to the effect of the plate voltage, the electrons are moving at sufficient speed to tear off electrons from the mercury atoms when collisions occur. When the mercury atoms have lost one or more electrons they are said to be *ionized*. Ionization, in the case of mercury vapor, is made evident by a bluish-green glow between the cathode and plate.

As the ionized mercury atoms have a deficiency of electrons, they have a positive charge which neutralizes the negative space charge and, therefore, permits the flow of a larger current with the same plate voltage. Another advantage of the mercury-vapor tube is that the internal voltage drop (between cathode and plate) is practically the same from a small load to full load. An increase in current through the tube results in an increased number of collisions between electrons and mercury atoms. This increased number of collisions provides a greater positive charge to neutralize the increased negative space charge due to the increased current through the tube; therefore, the internal voltage drop is the same at various loads (about 15 volts).

Another advantage of mercury vapor or gas filled tubes is that, if sufficient vapor or gas pressure is used, the cathode may be operated at a higher, more efficient temperature without damage due to evaporation. Tungar and rectigon tubes belong to this class of diode rectifiers.

Arc or vapor rectifier types of tubes are used where power efficiency is the controlling factor; however, high vacuum tube rectifiers are extensively used in radio receivers and audio amplifiers as a DC power source because they are less likely to damage by over-load, there are fewer audio frequency disturbances, and they can be mounted in any position.

As an example, some of the characteristics of the 83-V type tube are listed below:

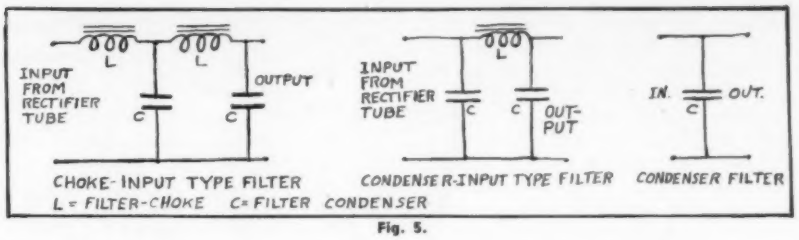


Fig. 5.

The 83-V is a high-vacuum, full-wave rectifier tube of the heater-cathode type. The spacing of the cathode and plate is close.

(1) Heater voltage (AC), 5.0 volts.

(2) Heater current, 2.0 amperes.

(3) AC plate voltage per plate (root mean square, rms.), 400 maximum volts (a).

(4) Peak inverse voltage, 1,100 maximum volts (b).

(5) DC output current, 200 maximum milliamperes (c).

(a) This is the working voltage between either plate and the cathode.

(b) This is the highest negative peak voltage on the plate that this rectifier tube can stand without passing current in the wrong direction. The peak plate voltage will be 400 rms. x 1.414, or 565 volts; therefore, 1,100 volts allow a margin of safety for higher voltages due to surges or other effects that may result in abnormally high voltages.

(c) This is the maximum continuous output. The surge current value, allowable, is about 550 milliamperes. This tube will supply from 300 to 500 volts at the input to the filter.

The cold-cathode type of rectifier tube is so called because no filament or heater current is used. Such rectifiers are a full-wave type with two anodes (plates) and a coated cathode sealed in a bulb containing an inert gas. In operation, the two plates are connected to opposite ends of an AC supply as shown in *Figure 2*, so that the two plates are alternately positive and negative. The internal construction of the tubes is such that when sufficient positive voltage is applied to a plate, the gas between that plate and the cathode becomes ionized. This ionization causes a small flow of current which results in heating the cathode sufficiently to emit electrons. These emitted electrons add to the initial current flow and therefore increase the temperature of the cathode. This cycle of events causes the current to build up to its operating value.

Under normal operating voltages, ionization does not take place between the anode, which is negative, and the cathode; therefore, this type of tube acts as a rectifier. Proper operation of this rectifier requires that a minimum load current always flow in order to maintain the cathode at the temperature required to supply sufficient emission. From the foregoing, it is evident that the cathode of a cold cathode rectifier tube is not cold when operating. It will build up the proper cathode temperature due to the internal action described above. This type is useful in circuits where the saving of filament power is important, for example, on a long line where it would be practical to supply relatively high voltage plate current but not low voltage filament current.

Another type which is used as a relay, a voltage regulator, or a rectifier, has two similar control electrodes and one anode. The conduction path between the control electrodes is known as the control gap. The conduction path between either control electrode and the anode is known as the main gap. A small amount of current in the control gap (in some tubes, less than 5 microamperes) will produce ionization sufficient to initiate conduction in the main gap. This is equivalent to the action of a conventional relay because a small value of current can be used to close a local circuit containing more current. The main gap will carry from 10 to 30 milliamperes. These tubes are used in the place of relays in selective ringing party line telephones.

An inspection of the rectified output current curve of *Figure 2* will show that filtering or smoothing will be necessary before this current can be used in voice frequency circuits. Various types of filters for this purpose are shown in *Figure 5*. As the filter condensers are in parallel with the load, they store energy at the peaks and release this energy when the voltage dips, thus having a smoothing effect. The principal use of a single condenser filter is where the load current is small, as in voltage supplies for cathode-ray oscillographs. The current in such cases may be only 0.1 milliamperes at 1,000 volts or more. The ripple or AC component of the rectified and filtered DC output should be less than 1 per cent of the above output of 1,000 volts.

The single condenser filter would require a condenser of unreasonable size to filter the amount of plate current required for typical voice reproduction equipment; therefore a choke (inductance) coil is used in addition to con-

(Please turn to page 41)

Paul A. Porter, if nomination to FCC is approved by Senate, may become next commission chairman. . . . FCC issues report attacking industry for decrease in rural telephone service, which, at certain points, Mr. Welch says, is unfair, fallacious and incomplete. . . . The industry, he says, has a right to expect that responsible federal agencies should present such a matter fairly with all relevant facts in true perspective.

UNLESS unexpected strength develops in the opposition camp, the next chairman of the Federal Communications Commission will be Paul A. Porter. The qualification is stated that way because, at this writing, there is evidence that some fight may be made in the Senate against confirmation of President Roosevelt's nominee. But more of that anon.

First of all, who is Paul A. Porter? To a good many telephone men the name will, perhaps, be strange, because Porter's activity in the communications business has been principally in the field of radio broadcasting. More recently he was the director of publicity for the Democratic National Committee. During the Roosevelt-Dewey campaign, Porter was the right-hand man of Democratic Chairman Robert E. Hannegan. Since the fourth term bid was such an overwhelming success, politically at least, that makes Porter, as well as Hannagan, pretty far ahead in the line for political plums to be handed out to the "faithful party workers." This situation was naturally foreseen by political observers in Washington. For some time there have been predictions, including those made in these pages, to the effect that Porter was a favorite choice to succeed James L. Fly to the FCC chairmanship. Here is a thumb-nail sketch of Porter's background.

He is a relatively young man for such a job—40 years of age. He is medium sized, fairly good looking in a scholarly sort of way, with a tendency in recent months to put a little flesh on a previously rather lean frame. He was born in Joplin, Mo., and was educated at Kentucky Weslyan College in Winchester, Ky. After finishing college he became a reporter on the Lexington (Ky.) *Herald* and was promoted to city editor of that paper. Meantime, he studied law at the University of Kentucky and was admitted to the bar. By 1933 Porter had become counsel for General Newspapers, Inc., an organization owning daily newspapers in southern states, principally Georgia and Oklahoma.

This was during the early days of the New Deal when the Department of Agriculture was encountering considerable difficulty in gaining acceptance for its cotton crop program in Dixie. Porter, who seems to have been a more or less congenital admirer of New Deal philosophy, jumped into this situation voluntarily with both feet. He wrote an editorial praising the administration's cotton program in a Georgia newspaper which was so effective that it won the respectful attention of Vice President Henry A. Wallace, then Secretary of Agriculture.

Porter was invited to come to Washington to help the Department of Agriculture conduct a publicity program in connection with its cotton reducing plans. Some of the older cotton growers could see no sense in the new-fangled idea of getting more government money by agreeing to grow less cotton. Porter evidently succeeded in convincing enough of them, however. Best evidence of this is the fact that, on his own admission, he came to Washington planning to stay only three or four months in 1933. But he stayed on for four years, changing over to the job of special counsel to Administrator Chester Davis of the AAA. That made Porter more or less a charter member of the New Deal.

However, in 1937 Paul Porter decided to leave government service and practice law for private industry. He

became Washington counsel for the Columbia Broadcasting System. During this period be became well known and liked by his fellow members of the Federal Communications Bar Association. When Pearl Harbor came, Porter was called again to government service and responded. He took a job as deputy administrator of OPA under Leon Henderson. One of his special tasks was to set up a nation-wide system of rent control. He did this so succesfully that it is today regarded as the most effective of all phases of OPA price regulation generally—which is quite a tribute in view of the vast scope of the OPA price-control function.

Last March, as stated above, Porter again left formal government employment for the purely political job on Democratic Chief Hannegan's staff. His nomination to the FCC was sent to the Senate by the President on November 16. Under the terms of the Communications Act, the President's nomination of Porter simply designated him as a member of the FCC, not as chairman. If, as, and when he is confirmed, however, it is generally understood that he will be named chairman by President Roosevelt, who has authority under the statute to make that designation without regard to Senate confirmation.

Meantime, President Roosevelt has asked Commissioner E. K. Jett to take over the function of acting chairman.

At this writing the President had made no nomination to the remaining vacancy on the FCC—that left open by the expiration of the term of former Commissioner T. A. M. Craven.

* * *

Is it possible that Porter will be denied confirmation? This writer does not think that such a development is likely. Because Porter comes direct from the Democratic National Committee staff to a post which is especially sensitive to political repercussions, the nomination has naturally struck some fire from the opposition. The wounds of the recent vigorous campaign were not quite healed enough to avoid that. But beyond a Senate sub-committee hearing and a few fireworks for the record, it is hard to believe that the opposition will get anywhere.

Senator Bushfield, Republican of South Dakota, said he would oppose Porter's nomination if it is approved by the Senate Interstate Commerce Committee, to which it has been referred.

"If radio is to survive on a basis of justice and equality," Bushfield said, "it can't be tied to a political party as closely as these circumstances suggest.

PAUL A. PORTER

Otherwise it would become merely a party channel of communications."

Senator Butler, Republican of Nebraska, called for a thorough investigation of Porter's qualifications for the job to which the Democratic official has been named. Butler said the nomination did not encourage "the harmony program we all really want until the war is won."

Senator Gurney, Republican of South Dakota, a member of the Interstate Commerce Committee, said he did not know Porter and that he hoped the appointee would be called before the committee to testify. Senator Wheeler, Democrat of Montana, chairman of the committee and an advocate of limiting the powers of the FCC, was not in the city for immediate comment.

It is too early, of course, to venture any judgment on Porter's capacity as chairman of the commission. He is known to be a vigorous adherent of New Deal philosophy. But it is only understandable that the President should select such a person for the important policy-making job of FCC chairman. On the other hand, Porter has never notably shown any indication of being domineering or especially argumentative along lines that would surely make for trouble if he starts throwing his weight around on the FCC.

Perhaps it was because he wanted a little closer policy control on the FCC that the President has apparently passed over the opportunity of elevating, to the chairmanship, established members of the commission — notably the Democratic dean of that board, Paul A. Walker of Oklahoma or Commissioner Clifford A. Durr of Alabama —the latter regarded in some circles as a likely successor to Fly.

Speaking of Commissioner Durr brings up the matter of a very interesting document issued last week by the FCC Accounting, Statistical, and Tariff Department (dated October), entitled "Preliminary Studies on Some Aspects of the Availability of Landline Wire Communications Service." Durr is recalled in this connection because of his recent remarks about the need for increasing farm telephone service and his speculation regarding the promotion of rural telephone service along lines parallel with the activity of the Rural Electrification Administration.

To show that other FCC members as well are thinking along this line, it may be noted that FCC Commissioner Ray C. Wakefield, in discussing this problem at the annual meeting of the National Association of Railroad & Utilities Commissioners at Omaha, said:

"The problem has not gone without recognition by the Bell System and the Independent telephone companies. The Independent companies are presently studying the problem. Only recently, President Gifford of the AT&T suggested that the entire telephone industry, both the Bell System and Independent companies, unite in finding ways and means to furnish inexpensive rural service, and suggested that there are developments in sight which may make an economical service to farmers possible. Whether rural telephone service can be provided more economically by the Bell System, by the Independent telephone companies, *or by rural cooperative associations* can be debated; but there can be no debate on the urgent need for both improving and expanding it in the immediate postwar era." [Italics supplied.]

Whether either Durr or Wakefield had anything to do with the recent FCC report above mentioned—or for that matter had any special knowledge of it—is, of course, mere speculation. This report touched on the availability of telegraph and telephone service, with special emphasis on the latter in rural areas. Discussing rural telephone service, the report stated:

"In the past two decades the total number of telephones in the United States increased from 14,000,000 to over 23,000,000. During approximately the same period, however, telephone service available on farms has declined sharply. This decline occurred in practically every region and in most states, and it was evidenced in terms of overall numbers, in the proportion of farms with telephones to total farms and in the number of telephones per 1,000 farm population. Whereas 2,498,000 farms reported telephones in 1920, only 1,527,000 had telephones in 1940, a decrease of 39 per cent. The proportion of farms with telephones to all farms during the same period fell from 38.7 per cent to 25.0 per cent. In terms of

the telephones available to the farm population, the data show a decrease from 79 telephones per 1,000 farm persons in 1920 to 50 in 1940.

"At the same time that this decline in farm telephone service was occurring, farmers were expanding their purchases of radios, automobiles, and electricity. In 1940, for example, 60 per cent of the farms had radios while only 25 per cent had telephones. Between 1920 and 1940 the proportion of farms with automobiles increased from 30 to 58 per cent, and an even greater relative expansion occurred in the electrification of farms. It is noted that the growth in the number of automobiles was stimulated by governmental disbursements for highways and that a large measure of the extension in rural electrification was due to the activities of the Rural Electrification Administration.

"This report does not attempt to provide a comprehensive and detailed explanation for the decline in the number of telephones on farms. However, it is pointed out (a) that during the period of rapidly failing farm income the cost of telephone service to farmers increased rather than decreased; (b) that the possibilities for obtaining cheaper farm telephone service were diminished by the reduction in the number of cooperative telephone companies; and (c) that the extension of control and influence of the Bell system over Independent companies changed the tariff policies of the latter so that greater emphasis was placed on maintaining and increasing rates rather than lowering rates."

The report went on to analyze the geographical deterioration of farm telephone service through various periods. It noted also progress of rural electrification during the past decade in comparable rural territory.

* * *

It seems pretty clear from a casual examination of this FCC staff report that it is "slanted" in the direction of spotlighting the need for rural telephone service. The approach underscores the decline in the number of farm telephones without a very marked effort to analyze the reasons for the decline beyond a strong and, in this writer's opinion, entirely fallacious implication that high rates for farm service was the principal reason.

The report introduces an unfair line of parallel reasoning when it points to the strides made by the REA in bringing power to farms and even points to the increasing number of automobiles on farms. The emphasis placed on the large number of farms still without telephone service completely overlooks the fact that a large number of farms in the United States, perhaps as many as two million, are places where the farm dwelling itself is valued at $500 or less. In other words, the total count of farms takes in some pretty poor economic units — Tobacco Road stuff — places where telephone service, power service, or any other similar service of substantial cost can never reasonably be extended on any other but a subsidized basis and certainly not on the basis of commercial solvency.

Furthermore, the reasons for the decline in the number of rural telephone stations are varied and well enough known. But one underlying fact does not seem to be so well known—at least it is more often overlooked. That fact is this: The farm telephone of two or more decades ago was a pioneer service which acted as a substitute for a number of farm services which have *subsequently* been extended. The early farm telephone gave the farmer a tie with the outside world when there was no radio to bring him news, no automobile in which to go to town, and no roads to use them on.

We know that with the coming of hard roads, the radio, the large number of automobiles and other more or less modern improvements, farmers in many instances did not feel that they had such a compelling need to continue telephone service. But it would seem to be unfair to suggest that the very industry which was *first* to bring relief to the farmer (by way of the earlier rural telephone lines) should be reflected upon by very reason of its pioneering phase. This, simply because later alternative and substitute services have made the earlier service a little more dispensable.

Thus, when the number of automobiles on farms increases while the number of telephones decreases, it does not necessarily follow that the telephone industry is failing in its job in comparison with the automobile industry. There is at least some indication that the automobile industry is picking up part of a burden, to some extent, previously borne entirely by the telephone industry.

Of course, the optimum is to have both automobile and telephone service on the farm, as well as electric power and other comforts of modern life. It is clearly such a socially desirable objective that we cannot blame political bodies—which are in a position to take credit for the expenditure of other people's money—from sensing a very popular opportunity to do that very thing in the field of rural telephony. *But at least we have a right to expect that responsible federal agencies should present the picture fairly with all relavant facts in the true perspective. If that is done, the telephone industry will surely not shrink from its responsibility whatever that may be in the future.*

Isn't It The Truth

>> *Over a pay telephone in a downtown restaurant in Louisville, Ky., is a picture of a wide-mouthed fish with the remark: "Even little fish get into trouble for opening their mouths too often."*

>> **The first telephone put into practical use n Wisconsin is said to have been installed at Appleton by a banker in 1876, less than a year after the invention of the instrument. He constructed a line connecting a drug store with the homes of two local physicians. About a year after the first telephone was installed at Appleton, a small exchange of about 25 telephones was opened there. During the same year, a rough, home-made switchboard of pine board construction was placed in service at Milwaukee.—*Commonwealth Telephone Company News*, Madison, Wis.**

>> *A midwestern customer was surprised and a little shocked when dismissed by a long distance operator with the threat, "If you will call up, I'll hang you." The operator, a student, hastily corrected her mistake by saying, "If you will hang up, I'll call you."*

THE PLANT MAN'S NOTEBOOK

BY RAY BLAIN • TECHNICAL EDITOR

OLD-TIME telephone men will remember when the attachment of clotheslines to telephone poles was considered a terrible sin. The practice with many companies at that time was to remove clotheslines regardless of the owners' feelings. Then someone considered the public relations angle. It was decided the telephone company would realize an overall gain if they ignored all clothesline attachments on their poles. It certainly does not pay dividends to remove a woman's clothesline and make her an enemy of the telephone company, for if she is not a subscriber at the time, she is, at least, a prospective one and her friendship is always considered an asset.

In line with this reasoning, one large telephone company included clotheslines in its specification for wire equivalents. This specification considers that a clothesline has an unbalancing effect on a pole equal to eight wires of 104-gauge in a heavy loading area, or 50 wires of the same size in a light loading area. We must admit that a clothesline loaded with wet clothes, in a high wind, exerts considerable pull on a pole.

In accordance with the present day public relations line of reasoning, most telephone companies will move drop wires without question when requested to do so by property owners. These requests are often received when a drop wire is run over a clothesline and used as a favorite roosting place for birds.

These are only a few of the numerous telephone problems and items of expense which seldom can be considered when a rate increase is requested.

* * *

Some employes in Washington refer to their supervisors as "snoopervisors" due, no doubt, to the fact that they snoop more than they "sup."

* * *

We hear a lot these war times about the importance of new ideas and the benefits of the suggestion system. Undoubtedly, new ideas discovered in this manner have contributed much toward our winning the war. Even so, we wonder how many good ideas have been lost through the rejection of really good suggestions because committees in power could not recognize their worth. Many ideas must be given a trial before anyone can decide their true worth or value.

It is a pity that the Independent telephone industry does not have a laboratory in which ideas of men in the field could be given a fair trial to determine their possible values. It is believed that this would provide a means to uncover startling developments and, therefore, contribute much to telephony in a very short period of time.

Some people may claim that the telephone industry has always taken to new ideas and exploited them to their fullest extent. However, we wish to take exception to this, for actually new ideas have often had to be literally smuggled into our industry. The writer remembers when the attaching of a drop wire to a messenger strand in the center of an aerial cable span was frowned upon with vengeance. At that time, this trick usually was accomplished by attaching a porcelain knob to the strand with a piece of No. 14 wire. One methods engineer finally used this idea whenever it was necessary to clear trees with drop wire in rebuilding an exchange. The "brass hats" noticed this feature when they inspected the new exchange and raised quite a rumpus, but the methods engineer stood his ground, claiming this feature was necessary. Sometime later this drop wire messenger attachment was adopted as a standard practice and a fixture was developed to replace the knob and iron wire ties, originally used. This incident is mentioned only to indicate how one good idea had to be smuggled into an exchange before its adoption could be forced.

* * *

The 14 giant buildings of Rockefeller Center in New York City contain over 21,000 telephones, some 500 private branch exchange switchboards and over 43 miles of cable.

* * *

Electronic tubes perform scores of vital and exacting services and increase the efficiency of our Navy's fighting ships. Thus, a modern battleship depends upon approximately 1,684 electronic tubes to help make her the great fighting mechanism she is.

An aircraft carrier requires about 1,550 electronic tubes. The lives of the pilots, navigators, bombardiers and gunners, as well as the ship's crew, depend on the precise and dependable operation of all of them.

A cruiser has at least 855 electronic tubes installed in many kinds of apparatus which perform scores of essential jobs.

A submarine carries some 200 electronic tubes, and a PT boat, 140.

* * *

Wesley Cole, Signal Corps telephone engineer, Seventh Service Command, Omaha, Neb., sends the following additional definitions:

An engineer is said to be a man who knows a great deal about very little

and goes along knowing more and more about less and less until finally he knows practically everything about nothing; whereas *a salesman*, on the other hand, is a man who knows very little about a great deal and keeps knowing less and less about more and more until he knows practically nothing about everything; while *a purchasing agent* starts out knowing practically everything about everything, but ends up knowing nothing about anything, due to his association with engineers and salesmen.

* * *

We are indebted to Engineer Clarence Dickerson of the Plant Engineering Agency, Signal Corps, Philadelphia, Pa., for the following item which indicates the necessity of fungus treating communication equipment before it is shipped to tropical climates:

"Did you ever grab hold of a chunk of wire and find the insulation drip off like a tie shedding gravy? Did you ever crank a power unit and find you were holding a fist full of pistons and connecting rods? Did you ever start a teletype machine and receive 'Mairsy Doats' in Japanese on the tape? Well, that's the work of 'Fungus Freddy,' the terror of Tarawa, the goon of Guadacanal, the curse of Casino.

"The origin of 'Frightful Freddy' can be traced to Pharaoh, who was greatly concerned with the frequent loss of his chariot wheels. The corroded condition of the Sphinx is said to be the result of the ravages of this scourge. The leaning of the tower of Pisa can be mentioned as one of 'Fungus Freddy's' pranks.

"We are concerned today with what he does to plant equipment, and that's plenty. The research department of the power subsection has tried embalming its power units. But Freddy won't stay embalmed. He never loses his punch or B. O."

* * *

Many people wonder why we have material surpluses during wartime. The answer is simple. The ever-changing tactics and strategy of modern warfare make weapons and equipment obsolete. If the enemy produces a weapon which outshoots ours, the only alternative is to produce one which will be better than his best, thus saving lives of American soldiers. As these weapons are declared obsolete, the completed items, as well as the work in process, must be declared surplus. To the layman this seems wasteful; to the strategist it is the only way to win the war.

* * *

Walter D. Fuller, president, Curtis Publishing Co., Philadelphia, Pa., states:

"We have been led astray in America by the familiar epigram that, if you produce a better mousetrap, the world will beat a path to your door. That is simply a trap for business itself. More companies than mice have been caught in it. If the automobile industry, for instance, had been gullible enough to fall for such a fallacy, America today might be little, if any, advanced from the 1918 level.

"People, of course, want a better mousetrap—but only if some energetic firm sells it to them. They will not bother to go out looking for it. People just aren't built that way.

"Because the mousetrap story seems plausible, it is dangerous. People fall for it. Many companies actually have had better mousetraps to sell but have gone into bankruptcy waiting for the public to go and get them. Someone else usually takes up both the idea and the plant, puts in a sound sales program, and makes a success. If we have learned anything from the late and unlamented depression, it is that production, without aggressive selling, is as futile as a hen on a china egg."

Statements of this nature always make me think that perhaps we in the telephone business have concentrated on production, but have not given proper thought to selling our services.

* * *

We were told by Hough F. Timmins, Signal Corps engineer, formerly with the Northwestern Bell Telephone Co. in Iowa, that he has made use of a novel gas testing method of locating aerial and underground cable trouble. Gas is connected at some central point, and gauges installed at equal distances in each direction. Gas is introduced into the cable until the gauges read about 10 pounds. Then both gauges are checked periodically for several hours and if one drops faster than the other, it indicates an opening in that section of cable. As a further check, splices and other suspicious locations may be soaped. When a cable plant is tested in this manner, it is assured that all sheath openings will be located so they can be repaired. In one exchange an average of 2½ sheath breaks were located per mile of cable.

* * *

According to the editor of *Forbes Magazine*, in the September 15 issue, you can start a *telephone answering exchange* for less than $5,000 that may net you up to $1,000 a month within a year's time. Almost all large United States cities now have these exchanges, but there are hundreds of good sized towns where they have not been introduced and where a demand for such service exists.

The telephone answering exchange

ENGINEERING CHIEF OF PLANT ENGINEERING AGENCY

LIEUT. COL. SAMUEL H. RIDGWAY

Lieut. Col. Samuel H. Ridgway, Jr., was born November 23, 1901, in Kentucky. While attending the University of Kentucky, from which he graduated with a B.S. degree in mechanical engineering, he served in the Reserve Officers Training Corps from 1919 to 1921.

From 1923 to 1924 he was a student engineer with the Carrier Air Conditioning Corp., later becoming associated with the Southern Bell Telephone & Telegraph Co., in the division plant engineer's office, at Louisville, Ky. He was transferred to the Atlanta, Ga., office of Southern Bell in July, 1927, where he was engaged in studying and surveying installation methods throughout territory served by the company until November, 1929.

He was then promoted to division plant supervisor of the Mississippi division of the company. In November, 1934, he became district plant chief of Atlanta, and in June, 1939, was appointed district plant manager at New Orleans, La.

He remained with Southern Bell until he was commissioned a major (temporary) in the Signal Corps on June 15, 1942. He was ordered to active duty on July 1, 1942, and assigned to the Office of the Chief Signal Officer, Washington, D. C.

The following August he was assigned to the Plant Engineering Agency, Philadelphia, Pa., where he subsequently became chief of the engineering branch. He was promoted to lieutenant colonel (temporary) on October 19, 1943.

in Minneapolis, Minn., operated by R. A. Larsen is given as an example of a typical system. The principal equipment used is two leased PBX switchboards, with a total of six operators, two operators per shift, providing 24-hour service.

The business is simple. Let's say you are a dentist, working alone. When you go out to lunch there is no one to answer your telephone. These calls may be transferred to the Telephone Answering Exchange by throwing a key which connects your telephone to the special switchboard where a light flashes under your name on the designation strip. The exchange answers your name, acting as your secretary or receptionist. Names, numbers and specific messages are taken and relayed to you upon your return.

If you are a small business man without an office staff of your own, the exchange acts as your secretary, and no important calls—or orders—will be missed because of your absence. Even if you have a secretary, her hours are limited, whereas the exchange is on the job 24 hours each day.

For only $5.00 a month you may have "alternate listing" service, *i.e.*, instead of a direct extension, you have two numbers listed in the telephone directory, one being your own and the other reading: "If no answer, or after business hours, call (the number of the exchange)." Messages thus received are later relayed to you.

The exchange also offers a "wake-up" service, address and mail service for those who want a downtown and mail address, and a very new kind of stenographic service which enables a client to dictate a letter by telephone. By leaving a supply of stationery with the exchange, the client can call the exchange and dictate a letter at any time. The letter is signed and mailed for him at a cost of 25 cents. Subscribers of the Minneapolis Telephone Answering Exchange are divided almost equally between business and professional men. After the war, however, Mr. Larsen plans to extend the service to include social calls so that a woman, for example, may spend the day away from home and on her return find out who called her and what messages were left.

Started just four years ago, the Minneapolis Telephone Answering Exchange is now a tremendous success, expanding constantly. The second PBX switchboard was installed this year. Each switchboard can handle up to 200 subscribers.

It might be desirable for telephone companies serving smaller communities to consider providing secretarial service for their subscribers at a fixed monthly charge. It might be a good revenue producer.

* * *

The War Production Board reports indicate that the demand in round numbers for consumers' durable goods, which have been unavailable during the war, will be as follows when manufacturing is resumed:

Washing machines	3,900,000
Refrigerators	3,500,000
Sewing machines	1,800,000
Vacuum cleaners	1,800,000
Toasters	2,400,000
Alarm clocks	12,500,000

There also will be an increased demand for telephones, both main lines and extensions, and the industry should experience a postwar period of prosperity.

* * *

Tests first begun about a year and a half ago, experimenting with two-way radio operation between the engineer of a locomotive and the train dispatcher at the Savannah (Ga.) Ordnance Depot, have been so successful that the method is rapidly expanding to other ordnance depots. Special wave lengths have been assigned to the depots by the Federal Communications Commission, usually covering a distance of about 30 miles from the dispatcher's office. The maintenance cost of radio sets on locomotives is slightly higher than those in an automobile, due to the greater vibration of the trains.

* * *

Received a letter from Col. S. K. Baker, formerly with the Signal Corps and now back on his civilian job as AT&T division construction superintendent, Division 6 (Ohio, Indiana, Michigan) at Cleveland, Ohio. During the two years Colonel Baker served in the Signal Corps in the present war, he practically traveled the world and has been on duty in several foreign countries.

HOW TO PROLONG LIFE OF ELECTRIC AND TELEPHONE CORDS

[EDITOR'S NOTE: The following information may be considered worthwhile for telephone companies to reproduce in local advertisements or use in bill inserts, and is published for whatever use our readers may wish to make of the material.]

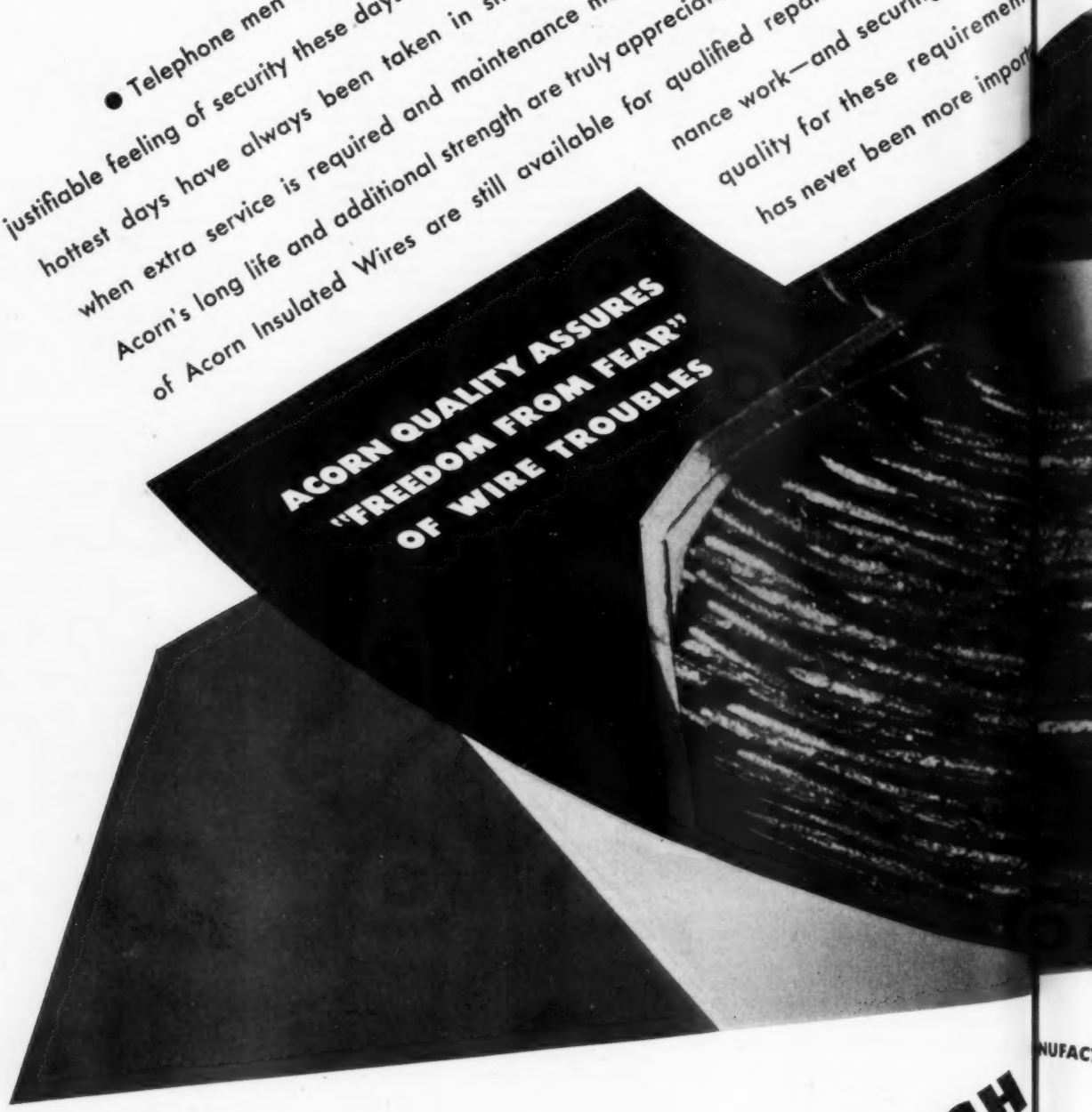
Every day you add to the life of electric appliances and telephone cords, you are contributing just that much to the war effort by helping to stretch the available supply of vitally-needed copper and rubber. Here are some simple ways of caring for home front "lifelines:"

1. **Keep all cords free from kinks, sharp twists and knots. With telephone cords, this means straightening them whenever they become tangled. When electrical cords are disconnected from appliances, hang the cords over large, round wooden pegs or over two or more metal hooks, or coil them loosely. Hang or coil the cord so that the same spot doesn't always get the rub or bend. If the cord is attached permanently, wrap it loosely around the appliance, being sure to let the heating appliance cool first.**
2. **Don't run lamp or telephone cords under a rug. They wear out more quickly from being walked on, and the lamp cord may be a fire hazard.**
3. **Never detach the electric cord from an appliance while the current is on. Instead, pull the plug from the outlet or current source first, to avoid sparking which slowly destroys the metal of the terminals and makes replacement necessary.**
4. **Keep all cords dry. Even rubber-covered ones will age more quickly if wet frequently. Clean with a soft brush or a dry dust cloth, never with cleaning fluid. The latter might deteriorate the rubber and other insulation materials.**
5. **To disconnect from electrical appliances, grasp the plug, not the cord. Pull it straight out, or if it sticks, rock it gently from side to side as you pull to loosen one connection at a time.**
6. **Stapling or nailing cords to wall or baseboard is likely to injure the copper wire inside.**
7. **Keep cords in repair. If the covering is worn off appliance or light wires, the results may be a short circuit, a fire, or dangerous electrical shock.**

(Courtesy TELEPHONE TOPICS)

● Telephone men who have standardized on Acorn wire have a justifiable feeling of security these days. Winter's worst blizzards and summer's hottest days have always been taken in stride by Acorn Drop Wire. Now, when extra service is required and maintenance must be held to a minimum, Acorn's long life and additional strength are truly appreciated. Limited quantities of Acorn Insulated Wires are still available for qualified repair and maintenance work—and securing Acorn quality for these requirements has never been more impor

ACORN QUALITY ASSURES "FREEDOM FROM FEAR" OF WIRE TROUBLES



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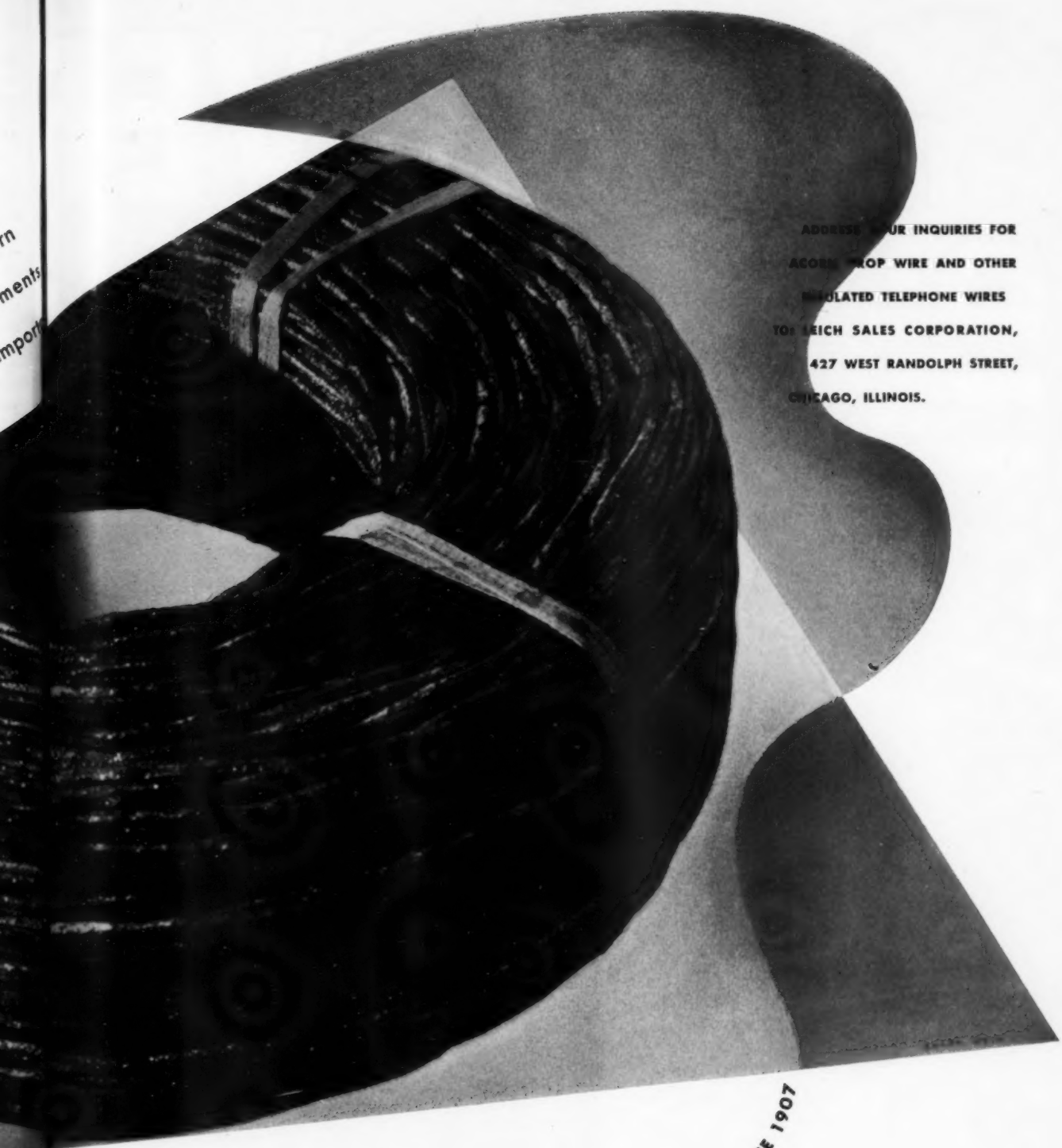


ADDRESS YOUR INQUIRIES FOR
ACORN COPPER WIRE AND OTHER
INSULATED TELEPHONE WIRES
TO: LEICH SALES CORPORATION,
427 WEST RANDOLPH STREET,
CHICAGO, ILLINOIS.

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

UP and OVER

—It's Simple as That!

There's something direct and positive about Strowger Automatic that goes straight to the heart of a telephone man. Standing in front of a Strowger switch, watching the "wipers" zip up and over to complete a connection, you *know* that the call is going through smoothly, quickly, accurately. From switch to switch, action is direct and straightforward—easy to follow, easy to understand.

This simple action is the key to the many operating advantages of Strowger Automatic Telephone Equipment. It provides these exclusive features:

FLEXIBILITY—Each Strowger switch is a unit in itself—a switchboard in miniature. The most complex problems of modern telephone switching are simply solved by combining these units.

EASY GROWTH—When Strowger Automatic service makes an exchange grow, it is easy to add switches to handle the additional load. Switches slip readily into place on the exchange frameworks; those previously installed are not affected.

MINIMUM MAINTENANCE — Years of development of the standardized Strowger switch mechanisms have given them exceptional sturdiness and long life. Maintenance is simple and inexpensive.

No wonder the Strowger System has retained, for more than fifty years, world leadership in the field of automatic telephony. No other equipment can promise better results for the telephone company—and none can back its promise with such a record of performance.

AUTOMATIC ELECTRIC

Originators and Developers of Strowger Step-by-Step Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions

AUTOMATIC ELECTRIC SALES CORPORATION, 1033 W. Van Buren St., Chicago 7, U. S. A.
Export Distributors: INTERNATIONAL AUTOMATIC ELECTRIC CORPORATION

SOUND RECORDING

By RAY BLAIN
Technical Editor

Fonda Corp., 245 E. 23rd St., New York 10, N. Y.—Here is a sound recording instrument that will record for as long as eight hours continuously at reasonable cost. The recordings, made on inexpensive cellophane tape, are permanent. They can be played back hundreds of times.

This recorder is simple to install. The complete recording mechanism and amplifier are mounted in a small lightweight carrying case. It can be connected quickly to a microphone, the radio or a telephone line when authorized. Neither technical knowledge nor experience is needed to operate the recorder. Simply press a button to start, and press another button to stop the mechanism. No supervision is required while recording.

The tape magazine comes pre-formed, ready to slip into the machine, simpler than threading a home movie projector. Lower the recording head on the tape and it is ready to record continuously or intermittently for eight hours. To play the record, simply place the reproducer on the tape. Each groove contains eight minutes of recording, making it simple to select the desired part of a recording. Both the recording and reproducing needles have permanent gem points. Needles do not require changing; shavings are eliminated.

The reproduction obtained from the Fonda recorder depends upon the speed of the tape past the recording needle. For medium quality reference recording, a speed of 40 feet a minute is used making the recording cost 50 cents an hour. To obtain higher quality reproduction, a tape speed of 60 feet a minute is used increasing the recording cost to 75 cents an hour. The cost of recording is thus made proportionate to the quality of reproduction required.

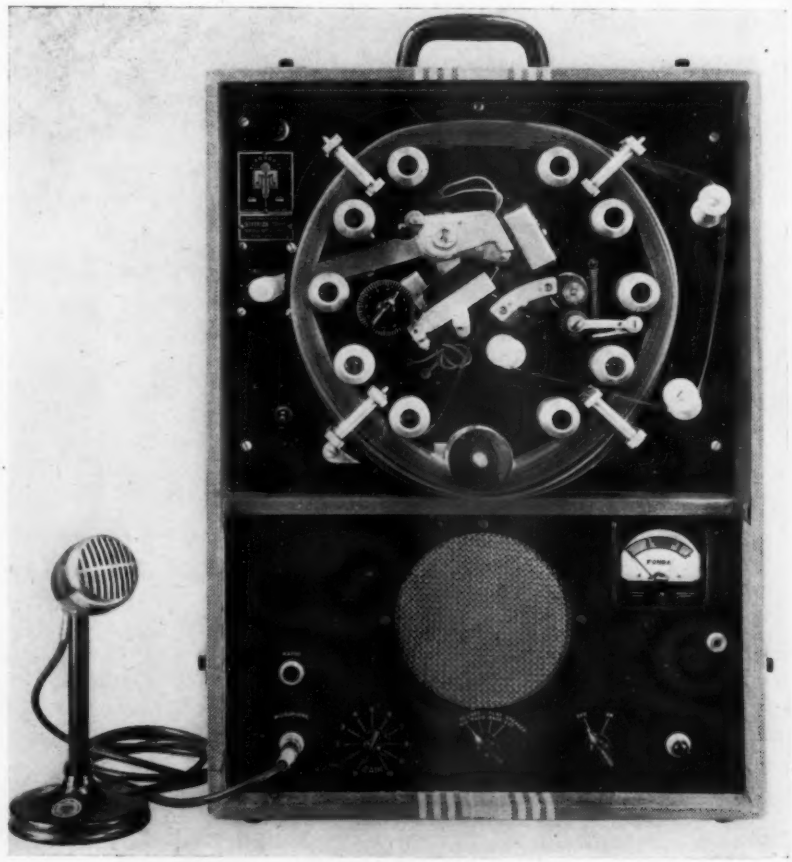
These tape recordings are surprisingly free of surface noise. They will remain quiet and give natural, distinct reproduction of voice or music for years. The tape is non-inflammable.

PART XII. The eleventh article in this series was published in the October 28 issue, page 22.

The recorder cuts 60 grooves on a 350-foot magazine of cellophane tape. A dial, calibrated from one to 60, moves the pickup to the desired track for playback.

The specifications of this recorder are briefly as follows:

The Fonda Model "AV" tape recorder consists of a motor driven system which passes an endless loop of cellophane tape over a ring of idler wheels. One loop of tape passes over a felt bed



Fonda tape recorder.

where the recording stylus embosses a groove of constant depth. A worm and gear system moves the recording head across the width of the tape, making a continuous groove at a pitch of 60 grooves to the inch. The sound modulation is applied laterally in the groove. The reproducing head moves freely and is guided by the groove. The amplifier, combined with the recorder, has a gain of 110 db and power output of five watts. The frequency response is uniform within 2 db from 50 to 8,000 cycles. Inputs are provided for a high impedance microphone or a balanced wire line.

Overall frequency response is determined by the tape speed. At 40 FPM, the useful frequency response extends to 3,000 CPS, and at 60 FPM the range is extended to 6,000 CPS. The low frequency response extends to 80 CPS.

Background noise due to combined mechanical vibration and needle friction is 25 db below maximum signal level at 40 FPM and down 30db at 60 FPM.

Speed regulation is sufficiently accurate to prevent any noticeable "wows" when reproducing sustained tones.

Cutting Head and Pickup: Cutting head, magnetic pickup crystal, having a complementary response range uniform within five db from 80 to 6,000 CPS. Cutting head impedance 500 ohms.

Audio Power Levels: Normal input to cutting head plus 20 db gain required to raise reproducer output to 0 level (.006 W.) 15 db. Impedances: Amplifier input 500 ohms and high impedance, output 500-15-8 and 4 ohms.

Control Panel: Contains receptacles for microphone and radio or wire line input, volume control, selector switch for recording and playback, power switch, volume indicator meter and pin-jacks for monitoring headphones.

Loudspeaker: Dynamic, 8 in. size mounted in amplifier panel.

Power Requirements: Standard recorder operates from 110 volts, 60 cycle AC, and draws 150 watts.

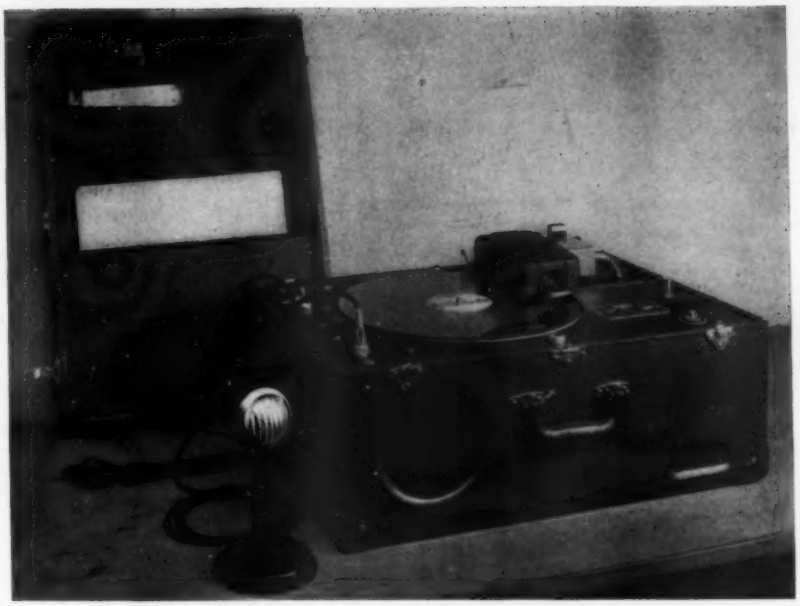
Dimensions and Weight: The recorder and amplifier are mounted in a carrying case which measures, closed, 17 ins. x 23 ins. x 13 ins., and weighs 53 pounds.

* * *

Frank Rieber, Inc., 11916 W. Rico Blvd., Los Angeles, Calif. This company manufactures various types of recording and reproducing equipment. However, only the Model P2 "C" Portable CGS Reference Recorder will be described herein. This is a combined recorder and playback, which uses 12-inch flexible plastic discs. These blanks will record 31 or 62 minutes on each side.

The specification of this recorder is as follows:

Recording Mechanism: The record is made on a 12-inch diameter turntable mounted on a vertical spindle which is geared at a ratio of 6:1 to a precision type 24-thread buttress lead screw. The turntable is driven by a friction drive wheel which is mounted with its drive motor and cone drive pulleys on a movable carriage which engages the lead screw. Also mounted on this carriage are the recording and playback heads which may be selected as desired. All controls are mounted on and travel with the carriage. A time scale is provided for indicating the progress of the recording. An enclosed switch is provided which automatically stops the mechanism when the carriage reaches the end of its travel. A light is provided which indicates that the motor is running and provides illumination for operation.



Rieber Model P2, Type C Portable CGS reference Recorder.

Remote Control: A relay is provided within the unit enabling the recorder to be operated intermittently from a remote point.

Amplifier Gain: The amplifier provided serves for both recording and playback functions. When recording, the amplifier is capable of operation from a signal level of minus 50 db. The input impedance is 500,000 ohms. The amplifier contains a built-in dynamic speaker with a telephone-jack which automatically disconnects the speaker when headphones are used. A monitoring jack is provided for headphone monitoring of the recorded signal.

Control: Volume control is provided for adjusting the gain of the amplifier when used in either the recording or playback function. A tone control is provided for suitably adjusting the low pass characteristics of the amplifier when used for the playback function.

Frequency Response vs. Recording Speed: The overall frequency response of the amplifier and recording medium is:

When operating at a groove speed of 7.7 in/sec., plus or minus six db from 150 cycles per second to 4,000 cycles per second.

When operating at a groove speed of 3.85 in/sec., plus or minus six db from 200 to 3,500 cycles per second.

Recording Material: Recording is of the embossed type on a thin (.15-inch) plastic disc. These discs are non-explosive and slow burning. The grooving may be done on both sides of the disc, beginning at the inside and progressing at 144 lines per inch to the outside.

Recording Speed: The groove speed is constant and may be either 3.85 inches per second or 7.7 inches per second. These speeds provide 62 or 31 minutes of recording, respectively, on each side of the disc. A simple means is provided for selecting the speed desired.

Styli: The recording is embossed and reproduced with sapphire styli which are permanent unless accidentally damaged, in which case they may be conveniently replaced.

V V

Canadian Bell Investment Grows

The investment in telephone plant of the Bell Telephone Co. of Canada has grown from $90,000,000 in 1924 to more than $235,000,000 in 1944, C. F. Sise, president, said in a message accompanying dividend checks. All but 28 per cent of the telephones in use have been converted to dial operation.

VIRGINIA INDEPENDENTS HOLD *Annual Two-Day Meeting*

By ELIZABETH DULL
Assistant Secretary-Treasurer
Virginia Independent Telephone Association

THE tenth annual convention of the Virginia Independent Telephone Association, held at Hotel Roanoke, Roanoke, Va., October 26 and 27, was acclaimed by all present an outstanding success. One hundred fifty-three members, associate members and supliers were registered.

The following officers were elected for the ensuing year: President, J. P. Borden, Charlottesville; first vice president, W. J. Holloway, Smithfield; second vice president, Lloyd C. Pulley, Gloucester; secretary-treasurer, Stanley Owens, Manassas, and assistant secretary-treasurer, Elizabeth Dull, Harrisonburg.

Following are the directors elected: Mr. Borden; W. C. Darrow, Tarboro, N. C.; E. B. Fitzgerald, Gretna; G. R. Gish, Bluefield; F. A. Gould, Harrisonburg; Mr. Holloway; F. G. LaPrade, Martinsville; Kelley McNish, Bristol, Tenn.; Mr. Owens; Mr. Pulley; and F. T. Prufer, Staunton.

Mr. McNish, 1944 president of the association, presided at the opening session, which took place at a luncheon, and introduced special guests of the convention.

Clyde Bailey, Washington, D. C., executive vice president, United States Independent Telephone Association, who is popular with many Virginia people, as well as with other telephone people throughout the United States, because of his friendly, and always helpful assisitance in any problem arising concerning telephony, then delivered an address on present day problems and postwar developments in the telephone industry.

Following Mr. Bailey's address, C. C. Ward, Charlottesville, in the absence of R. A. Phillips, Sioux Falls, S. D., former chairman of the USITA Advertising Committee, gave a report of

J. P. BORDEN

that committee. He introduced Betty Gray, Chicago, representative of the Telephone Advertising Institute, who had with her a most attractive display of various types of advertising material prepared by the institute for use of Independent telephone companies.

At the business session of the convention, following the luncheon, Mr. McNish called on Mr. Borden, 1944 secretary-treasurer of the association for his report. Mr. Borden stated that the association is in sound financial condition and that it had distributed more than 1,000 bulletins and letters during the past year in order to give members items of interest and value in the operation of telephone properties. He thanked all member companies for their efforts in helping him build up the membership.

Mr. McNish expressed his appreciation to the members of the association for their support during his year in office, and mentioned particularly the excellent work done by Mr. Borden, and by the legislative committee, composed of Rodney Coggins, Warsaw; G. Fred Switzer, Harrisonburg, and Mr. Owens.

An innovation at the convention was an "Hospitality Hour," which was well attended and enjoyed. The purpose of this hour was for all of the members and suppliers to get together and meet and talk with each other. The committee in charge is to be congratulated on the successful outcome of the "Hospitality Hour." The committee was composed of Mr. Coggins and A. W. Schell as chairmen; W. E. James, A. C. Stratton and Mr. LaPrade.

Shown above is a group of those attending the convention of the Virginia Independent Telephone Association.

LEFT PHOTO: This picture of a group of popular Virginia telephone men was taken at the recent convention. Back row (left to right): STANLEY OWENS, Manassas; KELLEY McNISH, Bristol, Tenn.; DR. GEO. B. COCKE, Manassas; President-elect J. P. BORDEN, Charlottesville. Front row (left to right): LLOYD PULLEY, Gloucester; FRANK LaPRADE, Martinsville; A. E. REYNOLDS, Bristol, and RODNEY COGGINS, Warsaw. RIGHT PHOTO: In this group photographed at the Virginia convention are: (Standing) JUDGE ROBERT O. NORRIS, Richmond, Virginia State Corporation Commission; J. O. MARTIN, Washington, D. C., Chesapeake & Potomac Telephone Co.; F. M. PARSONS, Chicago, Kellogg Switchboard & Supply Co.; T. S. GARY, Chicago, Automatic Electric Co.; G. FRED SWITZER, Harrisonburg, Harrisonburg Telephone Co.; ARTHUR W. HARRISON, Richmond, Chesapeake & Potomac Telephone Co.; KELLEY McNISH, Bristol, Tenn., Inter-Mountain Telephone Co. (Seated) ROBERT MASON, Richmond, Chesapeake & Potomac Telephone Co.; RODNEY COGGINS, Warsaw, East Coast Telephone Co.; MRS. G. FRED SWITZER, Harrisonburg; JOHN SHAW, New York City, American Telephone & Telegraph Co.; and FRANK LaPRADE, Martinsville, Lee Telephone Co.

On the morning of October 27, members of the association were privileged to witness "The Dramatization of Traffic Troubles and a Solution," written and produced by W. C. Darrow, Tarboro, N. C. This was the same production which was so successfully shown at the recent USITA convention in Chicago.

During the afternoon session, Judge Robert O. Norris of the Virginia State Corporation Commission addressed the gathering on "Postwar Planning."

"The question that is uppermost in the minds of nearly everyone at this time is to properly prepare and plan for postwar conditions. The present global conflict is slowly drawing to an end, and, within another year, or 18 months at the most, it is more than probable that all of the enemy countries will have been defeated. The world must then be prepared to meet the tremendous and innumerable problems that will confront society when the enemy troops have finally laid down their arms and asked for peace," Judge Norris stated.

"There are many of these problems that will have to be solved, but perhaps the two most important are: (1) To eliminate as far as possible the conditions out of which wars arise, and to prevent as far as possible the recurrence of another worldwide conflict; and (2) to provide that the people of the world may again resume their peace activities, without seriously disrupting economic conditions.

"No business is more interested in the solving of these two tremendous problems than are the managements of the telephone systems of this country. They are large employers of labor, and many of their employes have become soldiers and sailors during the present emergency. It is highly important that their operations be not interfered with, as they are the connecting links between the various sections of the state and the nation, large and small. Proper arrangements will have to be made to give these absent employes employment when they return, and the business man will have great influence in the molding and maintenance of that public sentiment that will be necessary if any degree of success is to attend our efforts in the avoidance of recurrent wars . . .", he said.

"For these reasons, the burden of solving these problems must necessarily rest largely upon the business men, who form such an influential and prominent element in the make-up of our social system. Many suggestions have been made as to how a recurrence of a global war can be prevented, but most people, who are qualified to express an opinion, agree that there must be some kind of covenant among the peace-loving nations of the world, by terms of which peace will be enforced by the utilization of such joint force as may be necessary. To this opinion, I subscribe, but I also insist that something more will be necessary, if peace is to be preserved.

"In the great democratic nations of the world, the machinery of government is almost entirely controlled by public sentiment. . . .

"Public opinion in the postwar years must be so molded as to demand of the government of our country not only an ever-ready ability to defend herself against aggressors, but also at all times the capacity to join with the other great peace-loving democracies of the world,

(Please turn to page 42)

ABOVE: Left to right: JACK HAVEN, JOANNE FEAZELL, W. C. DARROW, and GEORGE ROSE. Miss Feazell is associated with the Inter-Mountain Telephone Co., Bristol, Tenn.; the three men with the Home Telephone Co., Tarboro, N. C. RIGHT PHOTO: These Virginia telephone women are: Back row (left to right): EVA WISE, Harrisonburg; MRS. MILLER, Charlottesville; second row, MILDRED EDDINS, Harrisonburg; MARY CALLIS, Charlotteville; and DOROTHY LAMBERT and MRS. G. FRED SWITZER, of Harrisonburg; first row, LUCILLE WIMER, NAOMI FRIES, MARY ANN BRADSHAW and LUCILLE SHOEMAKER, all of Harrisonburg.

FLORIDA ASSOCIATION MEETS *In One-Day Convention*

By JOSEPHINE POPPLETON
Secretary-Treasurer
Florida Telephone Association

AN UNUSUALLY interesting meeting of the Florida Telephone Association was held on November 3, at the New Florida Hotel at Lakeland, Fla. This was a one-day meeting because of the general war activity at this time in Florida; however it was considered a most successful one. Approximately 75 persons attended.

The officers elected at the convention were: President, C. E. Archer, Tampa; vice presidents, C. H. Galloway, Winter Park; A. N. Seward, Tallahassee, and Otto Wettstein, III, Leesburg, and secretary-treasurer, Josephine Poppleton, Tampa.

The following, in addition to the above officers, were elected directors: E. L. Cox, Perry; J. L. McGehee, Marianna; Mrs. Allene Drew, Quincy; Ruby Mae Williams, Milton; M. P. Willis, McIntosh; H. A. Bishop, Starke; Max Wettstein, Leesburg; Carl D. Brorein, Tampa; Paul Brannen, Fort Myers; B. H. Galloway, Winter Park; Frank G. Jolley, Jr., Tallahassee; A. B. Dooley, Jacksonville; J. L. Sharit, Port St. Joe, and Ralph Maner, Tampa.

An address of welcome was given by R. G. Grassfield of the Lakeland Chamber of Commerce for the mayor, followed by a response by the "host" to the convention, W. F. Cook, manager of the Peninsular Telephone Co. exchange at Lakeland.

Jerry Carter, chairman, Railroad Commission of Florida, extended the best wishes of the commission and expressed regret that the other members could not be present. He stated that of all the duties under the jurisdiction of the commission, they received the most pleasure out of those having to do with the telephone industry. He stated that telephone companies in Florida had always given good service and giving good service brings happiness which is the ultimate aim in life.

Shown above are the newly elected officers of the Florida Telephone Association. Left to right: JOSEPHINE POPPLETON, Tampa, secretary-treasurer; A. N. SEWARD, Tallahassee, vice president; OTTO WETTSTEIN, III, Leesburg, vice president; C. H. GALLOWAY, Winter Park, vice president, and C. E. ARCHER, Tampa, president.

The president's report was then given by J. S. Gillentine, Fort Myers, who stated that any credit given for the success of the activities of the association and the meeting should be given Secretary-Treasurer Archer and Assistant Secretary Poppleton. He requested the treasurer to make his annual report which was approved.

Mr. Gillentine asked President-Elect Archer to preside, but Mr. Archer returned the gavel and requested Mr. Gillentine to continue the afternoon session as called for by the program.

The first address of the afternoon session was given by R. N. Pfaff, Atlanta, Ga., connecting company relations manager, Southern Bell Telephone & Telegraph Co., entitled "Some Aspects of the Telephone Job During The War and Postwar Periods." Mr. Pfaff reviewed the difficulties which have been facing the industry in carrying out its responsibilities in the war effort, despite handicaps brought about by shortages of equipment and manpower. He paid tribute particularly to telephone manufacturers for their effort in supplying the armed forces with vital war communications equipment, and for essential civilian use.

Among the problems which he stated must be given immediate attention in the postwar period is that of developing rural telephone service so as to bring about a greater use of that service on the farms. On this subject Mr. Pfaff stated:

"Prior to the outbreak of the war, the Southern Bell company had actively gone into what we call our rural development program. With all of its industrial and commercial advance in recent years, the South is still primarily an agricultural area. Most all of the towns and cities that have grown up in the South are, in the final analysis, trading centers for the surrounding country. It is constantly more important to the economic advancement of the territory and constantly more important from the industry's viewpoint that telephone service be made available to the residents of these rural areas.

"We have seen the development of electric power lines in rural areas. A reality with which we are faced is

that there has been a constant increase in the number of farmers having electric lights and that there has been a constantly decreasing number of farmers that have telephone service. This condition cannot continue, and it has now become a question of who will meet the demand for service. I am confident that you all are determined that the telephone industry will meet this demand.

"In the two years immediately preceding the outbreak of the war, our company constructed 3,800 miles of rural line and brought service to some 10,500 farms which had not previously had service. We were also able, in some cases, by the construction of these rural lines, to take over, with the approval and best wishes of the farmers, some of the subscriber-owned farmer lines, which have always been a problem from the standpoint of maintenance and transmission.

"We are now making surveys of the areas surrounding all of the communities which we serve. These surveys are a most important part of our postwar plan. We are sending men out on every road which leads from one of our exchanges into the country—men who are experienced in the sale of service, and, where possible, men who are experienced in the sale of rural service. These men are classifying the residents as to whether they are good prospects, doubtful prospects or no prospects at all. A study of this kind will give us a picture of our rural development market. It is, we feel, a fundamental preliminary to the development of our rural service program.

"It may be of interest to you to know that several of the state commissions are also very much interested in a rural telephone program and that they have questioned us as to what steps we intend to take to meet the demand for this type of service. We are keeping the commission informed as to our programs and plans as they develop. We intend to work with the commissions to furnish service to rural areas.

"There is one point in connection with the rural development program which I wish to call to your attention —that is, we seldom find that the revenue produced by a rural line will cover the cost of its construction and maintenance. Our company is prepared to lose *some* money in connection with its rural development program, as such; for we cannot get away from the fundamental which I suggested a moment ago, that the urban and rural areas are so closely tied together that it becomes necessary to develop certain areas which may not of themselves prove profitable, in order that the service provided will meet the requirements of the community and, in the overall, produce a reasonable rate of return.

"This one fact always bear in mind: In order to properly develop a rural area, service must be furnished at a price which the farmers can afford to pay."

Attending the recent Florida convention was a group of managers of independent Florida companies. Left to right: C. H. GALLOWAY, Winter Park (Fla.) Telephone Co.; OTTO WETTSTEIN, III, Leesburg, Florida Telephone Corp.; MRS. ALLENE DREW, Quincy (Fla.) Telephone Co.; A. N. SEWARD, Tallahassee, Southeastern Telephone Co.; G. W. THOMPSON, Fort Myers, Inter-County Telephone & Telegraph Co., and CARL D. BROREIN, Tampa, Peninsular Telephone Co.

LEIGHTON H. PEEBLES, Director, Communications Division of the War Production Board, Washington, D. C., addressing the recent convention of the Florida Telephone Association.

The high-light and outstanding feature of the entire meeting was an address given by Leighton H. Peebles, Washington, D. C., director, Communications Division, War Production Board. His subject was "Manner in Which the War Production Board has Accomplished the Government's War Purposes."

Mr. Peebles reviewed the organization of the War Production Board and its predecessor organizations and told of the efficient manner in which the WPB had accomplished the government's war purposes. He paid tribute to the telephone industry for its cooperation in helping the WPB carry out its jurisdiction in regard to the production of communications equipment. He gave a thorough resume of the recent changes in Orders U-2, U-3 and U-5.

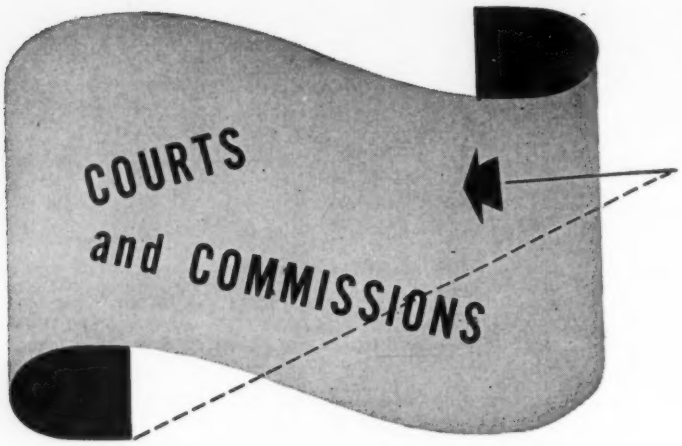
Mr. Peebles was introduced by Carl D. Brorein, Tampa, consultant with Mr. Peebles in the Communications Division. Mr. Brorein stated that in his opinion, "the Communications Division under Mr. Peebles' direction had set an excellent pattern of successful relations between government bodies concerned with wartime regulations and the regulated industry. The cooperation extended by the industry in the work of the division was an outstanding example of confidence in the purposes of the division and contributed in part to the excellent results accomplished by the division."

"In turn Mr. Peebles sought the advice of the industry in practical aspects of the orders he was required to issue and at all times there was a free and full exchange of views and ideas to the end that the greatest savings of material with the least effect on telephone service requirements could be brought about."

Mr. Brorein paid high respect not only to Mr. Peebles but also to his staff

(Please turn to page 39)

R. N. PFAFF, Southern Bell Telephone Co., Atlanta, Ga., shown as he presented his address before the recent Florida convention.



Applies for Revision of Service And Rate Schedule

An application for authority to revise its schedule of service and rates at its Riverdale, Neb., telephone exchange was filed October 28 with the Nebraska State Railway Commission by the Nebraska Continental Telephone Co., Columbus.

A loss was claimed due to the failure of revenue to keep pace with a general increase in expense, caused by higher operating costs and wage increases resulting from turnover in personnel. The company wants to charge an additional 25 cents per month for both business and residential telephones.

V V

Nebraska Continental Exchange To Increase Rates

The Nebraska Continental Telephone Co., Columbus, recently was given permission by the Nebraska State Railway Commission to increase its rates at the Riverdale exchange and to put into effect the following schedule:

Individual business, $3.50; business extension, $1.00; four-party, residence, $2.00; 10-party rural, residence, $2.00; rural extension, 50 cents, and to discontinue 25-cent charge for handsets.

The Nebraska Continental company has secured a building and will install automatic central office equipment in an effort to lessen the present loss from operation, which was $869 for the current year. This will give full automatic service.

V V

FCC Approves Increased Facilities for AT&T and Bell

The American Telephone & Telegraph Co. and the Illinois Bell Telephone Co. were authorized on November 15 to increase facilities between Atlanta, Ga., and Chicago at a cost of $1,268,000.

Applications filed with the Federal Communications Commission said the cable and other facilities were necessary to meet increased service demands brought about by increased war activity.

V V

Nebraska Commission Approves Tariff Clarification

The Nebraska State Railway Commission recently approved an application of the Lincoln (Neb.) Telephone & Telegraph Co. to clarify its general exchange tariffs by giving effect to various practices now being followed and to make a charge of 50 cents a month for operator sets with a single receiver, and 75 cents a month for double receivers.

The Lincoln company has on file an application to amend its tariffs by providing that its agents have the right to enter subscribers' premises at reasonable hours and to require payment for equipment that has been willfully damaged or destroyed.

V V

Supreme Court to Review Service Charges Controversy

The Supreme Court on November 13 agreed to review a controversy over the right of hotels to collect "service charges" on toll telephone calls made by guests from their rooms. (TELEPHONY, September 16, page 39.)

A group of 27 Washington, D. C. hotels had appealed from a District of Columbia federal district court decision restraining them from charging for telephone service other than the

U. S. tanks roll down a street in France, as Signal Corps wiremen repair disrupted communications.

regular telephone charges on toll calls.

The hotels contended that the services charged for were "hotel services" and not subject to the Federal Communications Act as toll telephone communications.

V V

Minnesota Company Applies For Increased Rates

The Hammond (Minn.) Telephone Exchange was ordered on November 9 to appear on November 27 and be heard in its application for increased telephone rates. In addition to the above matter, the company is seeking permission to limit service rendered on Sunday.

The present and proposed rates are as follows:

Class of Service	*Present Rates*	*Proposed Rates*
Individual line, business	2.00	$2.75
Individual line, residence	1.50	2.25
Four-party line, residence	1.25	2.00
Rural, residence	1.25	2.00

V V

Business Firm Granted Temporary Injunction

H. L. Dean, formerly employed as Little Rock, Ark., representative of the Aurix Memphis Co., manufacturer of a hearing device, was temporarily enjoined from using a Little Rock telephone number listed under the company's name, in an order signed November 3 by Chancellor Frank H. Dodge.

The order will remain effective pending outcome of a hearing on the permanent injunction sought in Pulaski Chancery Court by G. C. Hearn, company representative, against Mr. Dean and the Southwestern Bell Telephone Co. The complaint was based upon allegation that the defendant was taking advantage of the company's name in operation of a private business.

Mr. Hearn of the Memphis company was required to post $1,000 bond in chancery court as insurance against damage to the mechanism.

V V

Public to be Heard on Petition Against Minnesota Company

The Minnesota Railroad & Warehouse Commission has set for public hearing on November 27 the complaint of 100 telephone users against the Dodge Center (Minn.) Telephone Exchange. This action was taken in response to a petition, signed by the users, stating that service is inadequate and should be better for the benefit of the public at large.

The subscribers, in addition to the above statement, said the company has outlived its usefulness and is in need of extensive replacement, and that it now serves less patrons than it did a decade ago.

V V

FCC Issues Report on Rural Telephone Service

The accounting, statistical and tariff department of the Federal Communications Commission issued a 35-page report entitled "Preliminary Studies of Some Aspects of the Availability of Landline Wire Communications Service." [See "In the Nation's Capital," page 16.]

The report is dated October, 1944, but apparently made its public appearance only last week. Regarding the telephone industry, the report included a lengthy discussion on rural telephone service.

V V

Vermont Commission Approves Sale of Two Companies

The Vermont Public Service Commission, following hearings at Montpelier, granted authority to the Western New England Telephone Co., operating at Jacksonville, and to the Northern Telephone Co., Enosburg Falls, to sell their assets and property in Vermont to the New England Telephone & Telegraph Co. of Boston, Mass.

The commission stated that the rates, charges, rules and regulations of the petitioners are to be adopted by the purchaser so the charges to subscribers will not change. The New England company now owns or controls all capital stock of these companies.

V V

G. C. McConnaughey Named President of NARUC

George C. McConnaughey, chairman of the Ohio Public Utilities Commission, was named president of the National Association of Railroad & Utilities Commissioners, at the association's recent meeting in Omaha, Neb.

During the past year, Mr. McConnaughey had served as vice president of the organization. Prior to his appointment to the commission, he was a Cleveland attorney.

V V

Rockford, Ill., Seeks Reduced Telephone Rates

The Rockford (Ill.) City Council on November 13 instructed the legal department to petition the Illinois Commerce Commission for a reduction in telephone rates in Rockford.

A resolution, directing the city legal department to ask the commission for a study and survey to ascertain how much of the $2,934,975 excess profits reported by the Illinois Bell Telephone Co. for the eight months' period, ending August 31, had accrued in Rockford, was adopted following its presentation by an alderman.

V V

Keystone Telephone Co. Seeks Dissolution Decree

The Keystone Telephone Co. of Philadelphia, recently merged with Bell Telephone Co. of Pennsylvania, on November 15 petitioned the common pleas court in Philadelphia for a decree of dissolution. (TELEPHONY, September 9, page 32.)

It stated that a majority of the stockholders had authorized the sale of Keystone property to the Bell company, and that all debts and obligations had been paid off or provided for. Keystone has surrendered its charter to the state.

V V

Hearing on Increased Rates

The North Dakota Public Service Commission on October 16 conducted a hearing on the application of the Deering (N. D.) Telephone Co., seeking authority to increase its rates. Notice of the hearing was announced by the commission, it was stated.

V V

Seeks Sale Approval

The Bell Telephone Co. of Pennsylvania on November 10 petitioned the Pennsylvania Public Utility Commission for approval of the sale of its toll line from Muncy Valley to Dushore, Pa., to the Commonwealth Telephone Co., Forty-Fort, for $806.

V V

Thanksgiving Day Rates

Nebraska State Railway Commissioners November 13 granted the Lincoln (Neb.) Telephone & Telegraph Co. authority to apply Sunday toll rates on November 30.

V V

Summary of Commission Rulings and Hearings

Federal Communications Commission

October 26: Granted Pacific Telephone & Telegraph Co. authority to supplement existing facilities between Portland, Ore., and Spokane, Wash., and to several other points. Estimated cost, $385,790.

November 4: Granted Southwestern Bell Telephone Co., St. Louis, Mo., and the American Telephone & Telegraph Co. authority to supplement existing facilities between Kansas City, Mo. and Wichita, Kan. Estimated cost, $3,033,200.

November 8: Granted Southwestern Associated Telephone Co., Lubbock, Tex.,

special permission to amend Tariff FCC No. 3, effective on not less than one day's notice, to provide night and Sunday rates to two-way and conference message toll telephone service between 4:30 a.m. to, but not including, 6:00 p.m. on Thanksgiving Days, November 23 and 30, between points named.

November 9: Granted American Telephone & Telegraph Co. and Southern Bell Telephone & Telegraph Co., Atlanta, Ga., authority to supplement existing facilities between Selma and Goldsboro, N. C. Estimated cost, $257,000.

November 11: Granted American Telephone & Telegraph Co. authority to amend Tariff FCC No. 204, effective November 25, on not less than one day's notice, to provide for offering to the public of message toll telephone service between points in United States, and Seward and Whittier, Alaska; also to amend Tariffs FCC Nos. 132 and 200, to become effective on November 25, on not less than one day's notice, to provide for the listing of the Seward Light & Power Co. as a concurring carrier.

November 13: Granted American Telephone & Telegraph Co. and New York Telephone Co. authority to supplement existing facilities between New York and Buffalo, N. Y. Estimated cost, $125,000.

November 13: Granted Southern California Telephone Co. authority to supplement existing telephone and telegraph facilities between Los Angeles and San Diego, Calif. Estimated cost, $185,000.

California Railroad Commission

October 27: Granted Associated Telephone Co., Ltd., Santa Monica, extension of time to withdraw its rates for eight-party residence service in its Pomona exchange and authority to replace this service with four-party service at proposed rates.

November 10: First supplemental application filed by Associated Telephone Co., Ltd., Santa Monica, seeking authority to execute a supplemental trust indenture.

November 10: Granted Associated Telephone Co., Ltd., Santa Monica, authority to issue $10,300,000 of First Mortgage Bonds, Series C.

Illinois Commerce Commission

November 9: Hearing on application of Harrisonville Telephone Co., Waterloo, for authority to issue $65,000 of its capital stock.

November 14: Hearing on proposal of McHenry County Telephone Co., Marengo, to change rules and regulations for telephone service in Marengo and vicinity, stated in rate schedule ICC No. 2, rendered by said company.

November 15: Hearing on complaint of Sol Cotler against Illinois Bell Telephone Co., Chicago, as to refusal to furnish telephone service.

November 15: Hearing on complaint of Paul M. Brown as to removal of service by Illinois Bell Telephone Co., Chicago, and refusal of that company to restore service upon request of complainant.

November 21: Hearing on proposed advanced rates of National Trail Telephone Co., Altamont, for service in Altamont, Beecher City, Brownstown and St. Elmo, as stated in schedules rendered by said company.

November 21: Hearing on proposed rate advances of Clayton (Ill.) Telephone Co. for service as stated in schedules rendered by said company.

November 22: Hearing on proposed advance in rates of Flanagan (Ill.) Telephone Co. as stated in schedule rendered by said company.

November 22: Hearing on proposed advance in rates for service rendered by Mason City (Ill.) Telephone & Telegraph Co.

Missouri Public Service Commission

October 30: Joint application filed by U. S. Hamlin to sell and Wayne Record to purchase the Leasburg (Mo.) Telephone Exchange.

November 3: Approved joint application of Frank M. Holland to sell and E. O. and Alice Turner to purchase Auxvasse (Mo.) Telephone Exchange, Callaway County.

November 3: Approved joint application of C. H. Kendrick to sell and Lewis C. and Mable True to buy the Knox City (Mo.) Telephone Co.

Oklahoma Corporation Commission

November 21: Hearing on application of Okmulgee County Board of Commissioners for refund from Southwestern Bell Telephone Co. for alleged overcharges on telephone rates.

Wisconsin Public Service Commission

November 14: Hearing on application of Pleasant Corners Telephone Co., for authority to discontinue switching service from Community Telephone Co., Black River Falls, and establish switching service from Lund (Wis.) Telephone Co.

November 21: Hearing on application of Wind Lake (Wis.) Telephone Co. for authority to install a switchboard at Waterford.

November 21: Hearing at Richland Center on application of Pine River Telephone Co. for authority to increase rates.

V V

W. P. Banning, AT&T Executive, Retires

William P. Banning, assistant vice president of the American Telephone & Telegraph Co., retired November 1 after 24 years of service in the company's information department. He began his telephone career in 1920 after experience in the advertising and publishing field, including newspaper work in Shanghai.

Activities with which his name is associated include production of Bell System motion pictures, a project which he developed from its beginning; the Bell Telephone Quarterly (now the Bell Telephone Magazine), which he guided through more than 20 years, and creation of booklets about the telephone and its history which are put before the public by the system as a continuing activity.

His first post with AT&T was publicity assistant. He became assistant publicity manager in 1922 and publicity manager in 1924. His promotion to assistant vice president was in 1927.

LET'S FINISH THE JOB
Buy War Bonds

V V

Former Plant Engineer Promoted to Major

Louis D. Yard, who was engaged as a plant engineer with the Associated Telephone Co., Ltd., in Long Beach, Calif., before the war, was promoted to major, according to recent word from Italy. He is assistant communications officer at the headquarters of the 15th Air Force.

A first lieutenant in the engineer reserve, Major Yard was called to active duty in June, 1941. He was promoted to captain in February, 1942.

V V

Seattle's First Telephone Operator Dies

Mrs. Harriet Hanson Hall, the Pacific Telephone & Telegraph Co.'s first telephone operator at Seattle, Wash., died November 7 at the age of 80 in Yreka, Calif., where she made her home for the past 20 years.

Born at Clear Lake, Calif., she left her birthplace as a child of two, traveling by ox-team with her parents over the old Oregon Trail. From Alpha Prairie, Ore., she went to Seattle when she was 16.

Three years later, March 7, 1883, she left the University of Washington to become Seattle's first telephone operator.

Her career as a telephone operator ended when she married the late Valentine Hall. Until his death 20 years ago, she resided in Seattle.

Surviving are two cousins.

V V

OBITUARIES

WILLIAM HENRY COX, superintendent of the Brodhead (Wis.) Telephone Co., died October 24 after a week's illness with a heart ailment. Mr. Cox was 63 years old and had been in the employ of that company for about 45 years.

* * *

WILLIAM FLETCHER PATTEN, 72, retired equipment engineer, state area, of the Illinois Bell Telephone Co., passed away suddenly November 1 while visiting his son at Falmouth, Mass. Mr. Patten retired in August

1933, and had been living in Hingham, Mass.

He was born in Dorchester, Mass., in 1872 and spent his early days in New England. He graduated from the Massachusetts Institute of Technology in June, 1895. At that time, he joined the AT&T in the capacity of engineer, and in April, 1906 was transferred to the old Chicago Telephone Co. as first assistant engineer.

In May, 1907, he became central office and equipment engineer. In February, 1918, he became equipment and building engineer. In January, 1921, when the company was expanding, he was given the assignment of equipment engineer, which title he held until his retirement.

* * *

EDWARD ROCKWELL AUSTIN, 70, retired Southern Bell Telephone & Telegraph Co., employe and former editor of *Southern Telephone News*, died in Atlanta, Ga., November 14, after a brief illness.

* * *

WILLIAM J. WOOD, 55, a cutover supervisor for the New England Telephone & Telegraph Co., Boston, Mass., died suddenly in that city on November 13.

V V

Telephone Time Teller Makes First Error

St. Louis, Mo., citizens, accustomed to calling for correct time from the First National Bank's "Autochrome," were bewildered recently when the mechanical voice gave 7:15 p.m. as the correct time for more than an hour and a half.

However, time had not stood still and all was explained satisfactorily when it was found that the apparatus had blown a fuse at 7:15 p.m., which kept its time from marching on.

Bank officials declared it was the first time in more than five years of the machine's operation that it has made an error. It has answered more than 80,000,000 calls in that time.

V V

Telephone Demonstration On Campus Planned

The Illinois Bell Telephone Co., in cooperation with the Urbana, Ill., branch of the American Institute of Electrical Engineers, tentatively is planning to present a popular lecture and demonstration on the Bell Telephone System on the campus there during the early part of December.

Demonstrators from the Chicago branch of the telephone company would show latest developments in apparatus and equipment.

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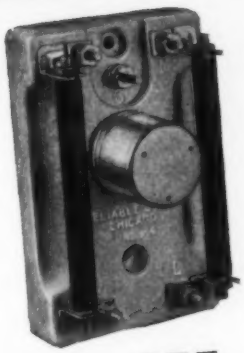

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PROTECTORS

Listed as Standard by the Underwriters' Laboratories.

The Reliable No. 955 INDIVIDUAL STATION PROTECTOR has all the features of the well-known line of RELIABLE PROTECTORS which have made them the standard of independent operating companies and railroads. This protector is of one piece design which simplifies mounting and eliminates any need for asbestos mats. The protector is neat and compact with connections easily accessible.

Made with special, low absorption porcelain base, phosphor bronze fuse clips and discharge block springs, and heavy binding posts with studs treated to prevent season cracking. Equipped with Reliable self-cleaning sawtooth discharge blocks and carbons which drain minor static discharges without leaving a ground on the line.

The No. 955 is equipped with two No. 55 seven ampere fuses.

The No. 955-A has clips which bite into the fuse tips and is equipped with two No. 77 seven ampere fuses.

Other fuse capacities are supplied on these protectors when specified.

"RELIABLE"
IDENTIFIES
THE QUALITY

STROMBERG-CARLSON COMPANY
Factory and General Offices: Rochester 3, New York, U. S. A.
Branch Offices: Chicago, Kansas City, San Francisco, Toronto

INDEPENDENTS-BELL NAME JOINT RURAL COMMITTEE

A JOINT committee of representatives of Bell and Independent operating telephone companies throughout the United States has been formed to advance the nationwide postwar programs which the various telephone companies have been working on individually to extend and improve farm telephone service, it was announced November 22.

Co-chairmen of the committee are John P. Boylan, president of the Rochester (N. Y.) Telephone Corp. and president of the United States Independent Telephone Association, representing the Independent industry, and Keith S. McHugh, vice president of the American Telephone & Telegraph Co., representing the Bell operating companies.

"Rural telephone service is more highly developed in this country, under the American system of private enterprise, than in any other country in the world," Mr. Boylan and Mr. McHugh said in a statement issued by them for the committee. "However, it is by no means as highly developed as we in the industry want to see it, and the industry intends to do everything in its power to provide more service, and better service, at a cost which the farmer can afford.

"Since operating telephone companies throughout the whole country have been working on this problem, a representative joint committee has been formed consisting of a number of their most experienced officials. We believe that the application of new facilities and methods which were under development by the industry before the demands of war interrupted our research and construction program will help to bring telephone service to many new farm customers. As soon as war demands are reduced, we propose to resume and expand our research effort and, along with it, the intensive program for extending farm service which was being carried on before the outbreak of hostilities.

"Over one-half million miles of telephone pole lines serving rural areas have already been built so that more than two-thirds of all rural families in the United States can be served from existing lines. Since 1935 more than 500,000 additional families in rural areas have become telephone subscribers—an increase of 35 per cent. One of the major objectives is to continue this upward trend by making the service over existing lines increasingly valuable and attractive. This the industry intends to do to the limit of its ability.

"A second major objective is to extend service at reasonable cost to families not now reached by existing lines. Telephone industry research in the last several years has successfully developed new construction materials and methods which substantially lower the cost of building wire lines to areas not previously reached. In addition, work was started by the industry in 1938 to develop a practical system of transmitting telephone conversations over electric power lines. A similar system can be used over telephone lines to increase their capacity. This so-called rural carrier system transmits a very high frenquency current over the wires. From 1940 on, experiments with this system for telephone service over rural power lines were carried forward in a cooperative effort of Bell Telephone Laboratories and the Rural Electrification Administration. Before this work was interrupted by the war, it was clear that a suitable system of this kind could be produced.

"One practical effect of these developments is to make it physically possible to furnish telephone service wherever there are rural power lines and no telephone lines. The telephone companies plan, in cooperation with REA cooperatives and with power companies serving rural territory, to determine the full extent to which rural carrier telephone service can be used economically and effectively.

"The telephone companies also plan to study the possible application of microwave radio systems to rural telephone service and to make use of this and any other new methods which will be helpful in serving the farmer."

The following representatives of the United States Independent Telephone Association and of the Bell System constitute the joint committee to consider means for further extension and improvement of telephone service in rural areas.

Mr. Boylan.

Mr. McHugh.

R. A. Lumpkin, Mattoon Ill., president, Illinois Consolidated Telephone Co., vice chairman.

H. V. Bozell, New York City, president, General Telephone Corp.

V. E. Chaney, Fort Wayne, Ind., president, Telephone Services Inc.

R. A. Phillips, Sioux Falls, S. D., vice president, Central Telephone Co.

G. L. Best, New York City, assistant vice president, A.T. & T. Co., vice chairman.

H. S. Osborne, New York City, chief engineer, A.T. & T. Co.

J. J. Hanselman, New York City, assistant vice president, A.T. & T. Co.

P. C. Mabon, New York City, assistant vice president, A.T. & T. Co.

The purpose of this joint committee is to facilitate industry-wide cooperation in finding ways and means to further extend and improve telephone service in rural areas. It will study and make available to both Independent and Bell companies information as to the types of telephone service best suited to the farmer's needs, improved methods of providing rural telephone facilities, the best operating procedures and the most effective methods of developing increased usage of rural telephone service. The committee's work will include not only an analysis of methods and facilities now in use but also the possibilities of new and improved methods, equipment and facilities.

The work of the committee will be divided into three main fields and subcommittees have been appointed in each of these fields, as follows:

FACILITIES SUBCOMMITTEE

Mr. Bozell, co-chairman.

Mr. Osborne, co-chairman.

J. W. Morrison, vice president, Rochester (N. Y.) Telephone Corp.

L. W. Hill, Tarboro, N. C., vice president, Carolina Telephone & Telegraph Co.

O. R. Roach, Bloomington, Ill., engineer, Wabash Telephone Co.

R. H. Manson, Rochester, N. Y., vice president, Stromberg-Carlson Co.

A. B. Clark, New York City, vice president, Bell Telephone Laboratories.

C. L. Sampson, Omaha, Neb., assistant to vice president, Northwestern Bell Telephone Co.

W. H. Mansfield, Atlanta, Ga., general plant manager, Southern Bell Telephone & Telegraph Co.

J. J. Pilliod, New York City, assistant chief engineer, A.T. & T. Co.

This subcommittee will prepare information as to means of improving rural telephone facilities and operating methods and of further reducing their costs. It will give particular attention to new developments which may be helpful, notably the use of carrier on power and telephone lines, new and improved wire construction, and the possible use of radio.

COMMERCIAL SUBCOMMITTEE

Mr. Chaney, co-chairman.

Mr. Hanselman, co-chairman.

J. F. O'Connell, Madison, Wis., president, Commonwealth Telephone Co.

H. F. McCulla, general commercial superintendent, Lincoln (Neb.) Telephone & Telegraph Co.

F. S. Barnes, vice president, Rock Hill (S. C.) Telephone Co.

E. N. Widen, St. Louis, Mo., general commercial manager, Southwestern Bell Telephone Co.

Wellington Powell, Albany, N. Y., general commercial manager, New York Telephone Co.

C. J. Yates, Atlanta, Ga., general commercial supervisor, Southern Bell Telephone & Telegraph Co.

This subcommittee will study methods of making telephone service of maximum value to the farmer, the most effective methods of developing increased telephone usage in rural areas, and the commercial aspects of all new developments in prospect. As a basis for its work, the subcommittee will prepare comprehensive surveys of the rural telephone market, including the desires of present and prospective customers.

INFORMATION SUBCOMMITTEE

Mr. Mabon, co-chairman.

Mr. Phillips, co-chairman.

L. F. Roberts, commercial supervisor, Jamestown (N. Y.) Telephone Co.

Leland Wright, general manager, Alexandria (Minn.) Telephone Co.

R. E. Shotts, Columbus, Ohio, president, Associated Public Utilities Co.

P. L. Schauble, Philadelphia, Pa., vice president, Bell Telephone Co. of Pennsylvania.

H. J. Barber, Cleveland, Ohio, vice president, The Ohio Bell Telephone Co.

F. C. Builta, Omaha, Neb., vice president, Northwestern Bell Telephone Co.

This subcommittee will study and report the best methods of keeping telephone company employes and the public informed as to what telephone services are available to the farmer and what the industry is doing to extend and improve rural telephone service.

Almost all operating telephone companies—Independent and Bell—have, at various times, conducted active campaigns to increase their rural telephone development and usage and have plans for early resumption of such campaigns, the committee statement said.

All the joint committees will obtain experience data from representative operating companies as a background for their work. As the committees complete portions of their work, the main committee will make the findings available to all operating companies so that each may be helped in its work of further extending and improving telephone service to the farms, according to the statement.

"I'm Glad We Used HUBBARD"

"Now that we don't have the manpower to maintain our plant as we did before the war, I'm mighty glad we used Hubbard Pole Line Hardware. With this husky hardware, we're all set for the duration."

Everywhere, telephone men who are regular users of Hubbard hardware are saying something like that. For they have found that Hubbard hardware stands up through years of service. They have come to depend on it for safety. They know that once a job's completed with Hubbard hardware, they are free for years from repairs and replacements. And they have a feeling that Hubbard hardware does a ship-shape job—gives them an installation of which they can be proud.

Right now, these qualities in Hubbard hardware are paying dividends. Telephone men with Hubbard-equipped plants are sitting pretty, confident of the service built into these quality products.

HUBBARD

HUBBARD PRODUCTS INCLUDE

ANCHORS and RODS
BOLTS CLAMPS
BRACKETS BRACES
GUY GUARDS and STRAPS
GUY WIRE PROTECTORS
NUTS and WASHERS
SEATS SHIMS STEPS
SCREWS FIXTURES

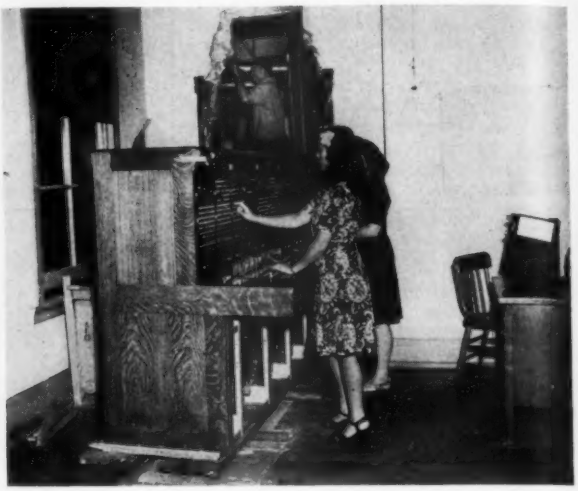
—and hundreds of other hardware items for pole line construction

DISTRIBUTED BY

AUTOMATIC ELECTRIC SALES CORPORATION

1033 WEST VAN BUREN STREET • CHICAGO 7, ILLINOIS

SIGNAL CORPS SWITCHBOARD MOVED WITHOUT INTERRUPTING SERVICE



When it was decided to replace the Army manual switchboard at Fort Sheridan, Ill., with a dial system, the question of space became a problem. It was finally decided that the manual switchboard must be moved so that the room it occupied could be utilized for the installation of automatic equipment. It was also necessary that this manual board furnish continuous service until the automatic system had been cut-over. To accomplish this, it was decided to move the manual board into the terminal room.

First, an opening of sufficient size to permit the entrance of the switchboard was cut through the partition wall. The temporary move was toward the main frame, so it was not necessary to cut slack in the multiple cables. Hardwood planks were placed the full length of the switchboard and, by the use of rollers, it was moved into the next room to the new location. Operators were on duty and answered all calls during the move. Not a single call was lost. Signal Corps telephone systems are all extremely busy in wartime and each and every call must be considered important.

The photograph at the left shows the Fort Sheridan switchboard before the move; the one at the right shows how the switchboard was kept in service during the change.

Striking Operators Threatened With U. S. Action

The War Labor Board on November 21 directed that striking Ohio telephone operators return to work immediately or face government seizure of the facilities.

N. P. Feinsinger, WLB hearing chairman, gave union officials until 10 a. m. November 22 to decide whether they would recommend that members of the Ohio Federation of Telephone Workers, an independent union, return to work.

A union spokesman in Cleveland said the strike will continue beyond the deadline set by the national War Labor Board "unless further word is received from the WLB or unless the government takes possession."

Mr. Feinsinger said the work must be resumed before the labor board could undertake a disposition of grievances.

"The only alternative," Mr. Feinsinger asserted, "is probable government seizure. In this case, work would be resumed under the same terms as prevailed at the time the strike started."

The board's directive came after an executive session. Union officials declined to say immediately what they would do, telling the board they would give their answer on November 22.

Leaders of the union said the WLB could end the strike "in one minute" by ordering dismissal of workers transferred to Dayton at higher compensation.

The strike started in Dayton November 17 when unionists protested the payment of $18.25 extra each week to outside workers. The additional money was said by the Ohio Bell Telephone Co., to cover certain living expenses of persons brought to Dayton from out of town.

[EDITOR'S NOTE: *Late on the afternoon of November 22, as* TELEPHONY *went to press, word was received from Washington that the strike of the Ohio Bell Telephone Co. operators had been referred to Fred L. Vinson, director of economic stabilization. Federal seizure of telephone plants affected by the strike, was expected momentarily.*]

V V

WAC Operator in Italy Locates Her Grandfather

A 94-year-old merchant of Avelino, Italy, had two main reasons for wanting to see American troops march through Italy. The reasons were his grandsons, the children of his son who came to America 55 years ago.

One of his grandchildren did get to Italy with the Army, but to the grandfather's surprise it turned out to be a feminine member of the Army—his granddaughter, WAC Corp. Anne D'Alelio.

Corporal D'Alelio, who worked for the New York Bell Telephone Co., before joining the WACs in 1942, is assigned to the Signal Corps in Italy as a switchboard operator. Her knowledge of Italian is a great asset to other members of her unit.

Florida Association Convention

(Concluded from page 31)

and personnel and to the industry for their work in the war effort.

The concluding address of the afternoon was made by D. A. Kafka, Tampa, general commercial superintendent, Peninsular Telephone Co., entitled "Commercial War Problems."

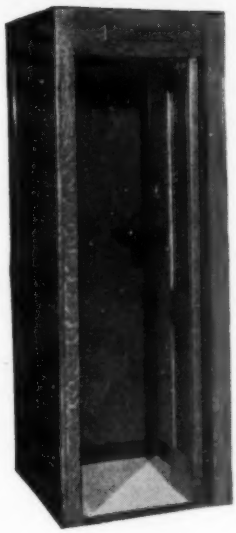
D. A. KAFKA

Mr. Kafka reviewed the problems confronting the commercial departments of telephone companies because of war regulations, particularly those coming out of WPB, governing the connection and re-connection of old and new telephone subscribers. He also referred to complications brought about by the billing, collection and reporting of federal excise taxes on telephone service.

In closing, Mr. Kafka paid tribute to the work of commercial offices by stating:

"While the theme of this discussion has been centered around problems brought on by the war, our duties have not been unpleasant. The commercial offices feel they have a definite responsibility and part in the successful prosecution of the war. Through their efforts, by the proper application of orders issued by the various governmental agencies, they have assisted in no small measure in the conservation of a huge amount of vital material. They have also kept in mind their responsibility to the public in wartime, and look forward to the time when they can again render service to a victorious nation, at peace."

STROMBERG-CARLSON
RECOMMENDS—



The
CHURCHILL
TELEPHONE BOOTH

An Invitation to Use the Pay Station

Operating companies have found the **CHURCHILL** No. 100 Folding Door Telephone Booth a builder of pay station business.

It is constructed as a single unit and equipped with a reinforced back panel for mounting a wall telephone or coin collector.

The **CHURCHILL** Booth is made of selected white oak and is available in light or medium oak in a satin finish.

Included as standard equipment are electric light and automatic electric ventilator.

Overall height is 84¾"; width, 29"; depth, 30½". Shipped knocked down and crated.

Illustrated literature available.

A TOOL THAT DOES AN "HONEST DAY'S" WORK

MANUFACTURED BY CABLE SPINNING EQUIPMENT CO.

Protects your workmen on the platform—can't slip on cable regardless of grade — and protects your cable from damage when used on spun cable or cable in rings. Give your men added protection with an S&S Platform Clamp.

STROMBERG-CARLSON COMPANY
Factory and General Offices: Rochester 3, New York, U. S. A.
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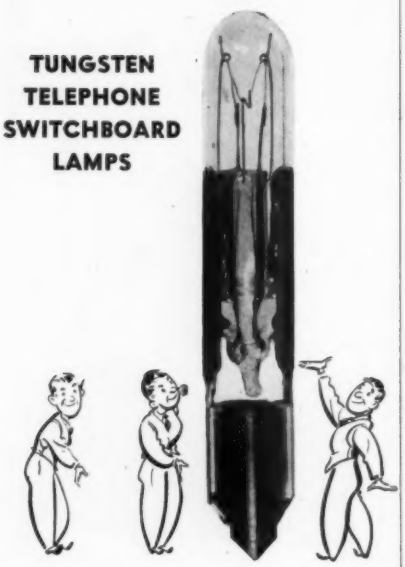
LIGHT UP FASTER • BRIGHTER

WITH STRONGER

SYLVANIA

TUNGSTEN TELEPHONE SWITCHBOARD LAMPS



- LIGHT UP QUICKER
- MAXIMUM END-ON CANDLE-POWER
- MAINTAIN HIGHEST BRILLIANCY
- POSITIVE DAYLIGHT SIGNALS
- NEVER DAZZLE
- QUICKER RELAY OPERATION
- AVERAGE LAB LIFE 1500 HOURS
- RESIST BREAKAGE

WRITE FOR FREE SPECIFICATION CHART

BUCKEYE TELEPHONE & SUPPLY CO.
COLUMBUS, OHIO

The convention voted a life membership in the Florida Telephone Association to Retiring President Gillentine who has retired from active service in the telephone industry. In appreciation of his many years of service to the organization and to the industry, he was presented with the life membership.

Under River Cable Breaks

About 700 telephones on the south side of Manitowoc, Wis., and a long distance line south to Sheboygan, Wis., were out of order due to the breaking of a cable containing 400 sets of wires underneath the Manitowoc River recently.

EXETER TELEPHONE DIRECTORY — OCTOBER 1, 1944

National Trust & Savings Association
Member F. D. I. C.

BANK OF AMERICA
EXETER BRANCH — TELEPHONE 10
Local in Management — Statewide in Scope
GORDON COOK, Manager
R. N. HENDERSON, Asst. Cashier

Commercial Trust & Savings

DUNKIN'S
Grocery and Market
QUALITY FOODS — FAIR PRICES
FRIENDLY SERVICE
Phone 106

MILLARD'S
GRADE A
RAW AND PASTEURIZED
Phone 11-S-22

SIGNAL
PETROLEUM PRODUCTS
BUTANE SERVICE
PHONE 98
JACK GRIGGS, INC.
(Plant ¼ mile south of Exeter on highway)

SCHELLING'S
MEN'S WEAR
212 Pine Street — Phone 8

THE TOWNE SHOP
Smart Styles at Reasonable Prices
L'AIGLON DRESSES — GAGE HATS
Phone 270-J-1 — 112 North E St.

WILLIAM B. ADAMS
QUALITY JEWELER
Watches, Diamonds and Jewelry
Expert Watch Repairing
Phone 113 — 189 E. Pine

HOT POINT RANGES
HOME FURNISHINGS
Exeter Electric Co.
PHONE 124 — 236 East Pine St.

PALM BEAUTY SHOP
PHONE 36

Earl Weatherhead
TRUCKING
CEMENT PIPE CONTRACTOR — Phone 234

AVERY & AVERY
Lumber and Building Material
East End Chestnut St. — Phone 237-J-1

LONGLEY'S
GROCERY AND MARKET
555 South D Street — Phone 49-M

Phone 31 — Phone 31
W. R. Spalding Lumber Co.
Phone 31 — Phone 31

NORRIS ANDREWS
Fruit
Buyer and Shipper
PHONE 176
EXETER, CALIF.

Van Cleve Concrete Pipe
Manufactured and Installed
PHONE 371
Yard at Merryman Near Exeter

Welch & McCullough
Leo B. WELCH — W. W. McCULLOUGH
PUBLIC ACCOUNTANTS
186 East Pine Street, Exeter, Phone 335
129 North Church St., Visalia, Phone 370

ROSS D. SELLARS
GENERAL INSURANCE
EXETER, CALIFORNIA
Office 155—PHONES—Res. 194-M

ALVA B. SELLARS
REAL ESTATE — NOTARY PUBLIC
Office 57 — PHONES — Res. 137-W

R. W. TOMLINSON & SONS
LUMBER
Phone 19-S-1 — Rt. 1, Box 338, Exeter

BOOKKEEPING SERVICE
TAX REPORTS
GOODAN BROS.
Tel. 378 — 246 E. Pine

THELMA'S FLOWER SHOP
Potted Plants—Cut Flowers
Funeral Work
508 Channing Way — Phone 202

C. R. McEVERS
Writes All Lines Of
INSURANCE
246 East Pine — Phone 54

EXETER HOSPITAL
149 South E Street — Phone 79
EXETER - - - - - - - CALIFORNIA

RICHFIELD SERVICE
LUBRICATION A SPECIALTY
HARLAN LANE
Phone 351 — Opposite Telephone Co.

EXETER WAREHOUSE CO.
FEED — FUEL — SPRAY MATERIAL
TRUCK SERVICE — STORAGE
SEEDS OF ALL KINDS
R. S. TOAST, Prop. — Phone 39

W. G. MACHETANZ
ATTORNEY AT LAW
Bank of America Bldg.
Office 227 — PHONES — Res. 339

SEQUOIA LAUNDRY
& DRY CLEANING CO.
Formerly Exeter Laundry — Phone 103

HADLEY
Funeral Chapel
Frank E. Page, Manager
Phone 66

Exeter Floral Shop
Flowers for all occasions
Potted Plants — Corsages
Funeral Work
Telegraph Delivery Service
Mrs. Arthur Crowley
Tel. 88 — 572 South E Street

POMONA PUMPS
Chas. J. Hammer
Machinery Co.
915 East Main St., Visalia — Phone 112

For Your
PLUMBING REPAIRS
CALL 113
Pius Plumbing & Furniture Co.

BUY UNITED STATES WAR SAVINGS BONDS AND STAMPS

The above photograph illustrates the unique telephone directory cover of the Exeter (Calif.) Telephone Co., Ltd. The only advertising in the directory, which is 12¾"x8⅛", appears on both outside covers, the inside covers and a one-page insert being devoted to directory listings. This unusual directory is printed on heavy, glossy cardboard, with a blue tint.

WILLIAM DE CARTERET (BILLY D.), president of the Exeter company, who was recently re-elected as president of the California Chapter of the Independent Pioneer Telephone Association, used the directory to publish a message to telephone subscribers to stir up interest in the building of a local American Legion clubhouse for social activities, as well as for club rooms for children.

Announcement was also made of the war bond purchases by Mr. and Mrs. DeCarteret, which showed that they had purchased 1,500 war bonds since December 7, 1941, which is about 1½ a day to September 3 when the directory was printed.

Electron Tubes—Their Use

(Concluded from page 15)

densers. A choke coil offers a low impedance to a steady current and a high impedance to any rapid change in the value of the current, thus smoothing out the ripples. The filters with choke coils are of two types: Condenser-input type and choke-input type. The input side is connected to the rectifier tube output.

The condenser-input type of filter gives a higher output voltage as the condenser across the input can charge up to the peak value of the voltage on the rectifier tube plates. However, the peak voltage is only attained at no load. As the load increases, it is necessary to take more energy from the peaks to fill in the dips; therefore, the peaks are cut down, which in turn reduces the output voltage. However, the voltage at full load is higher than with a choke-input filter.

The voltages across the input of a filter connected to an 83-V tube with 400 volts rms. on the plates are about as follows:

	No Load	Full load 200 Milliamperes
Condenser-input filter, with eight microfarad condenser	565 volts	475 volts
Choke-input filter	360 volts	335 volts

(To Be Continued)

V V

Northwestern Bell Head Addresses School Group

In an address to the students of Doane College, Crete, Neb., President R. J. Hopley of the Northwestern Bell Telephone Co., advised those whose college careers were interrupted by the war to pick up where they left off, provided their interests have not been changed as a result of military service.

Mr. Hopley said that insofar as the time factor is concerned, the two or three additional years would not be lost in the long run. He expressed the belief that, "The value of practical 'tool subjects' can be overemphasized because, in many lines of business, many phases of the technical aspects must be acquired through experience in the business rather than through college training."

He added: "In my judgment, our employment offices will be looking for various types of men and women and will have places for both specialists and those with general training and educational background. The liberal arts curriculum should not be excluded in preparation for business."

COMING TELEPHONE MEETINGS

Oklahoma Telephone Association, Hotel Huckins, Oklahoma City, November 27 and 28.

Minnesota Telephone Association, St. Paul Hotel, St. Paul, January 23, 24 and 25, 1945.

Texas Telephone Association, Baker Hotel, Dallas, March 12 and 13, 1945.

Kansas Telephone Association, Hotel Kansan, Topeka, March 15 and 16, 1945.

Iowa Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 3 and 4, 1945.

Nebraska Telephone Association, Hotel Lincoln, Lincoln, April 5 and 6, 1945.

Spring Executives' Conference of the United States Independent Telephone Association, Edgewater Beach Hotel, Chicago, April 10 and 11, 1945.

Illinois Telephone Association, Hotel Pere Marquette, Peoria, April 19 and 20, 1945.

Ohio Independent Telephone Association, Deschler-Wallick Hotel, Columbus, April 24 and 25, 1945.

Tennessee Independent Telephone Association, April 27, 1945. City not yet decided.

Indiana Telephone Association, May 9 and 10, 1945. City not yet decided.

Pennsylvania Independent Telephone Association, Hotel Lawrence, Erie, May 22, 23 and 24, 1945.

ACORN
INSULATED WIRE
A I W Co.
If you have a tough assignment for DROP WIRE—TRY ACORN
Increased facilities enables us to handle your limited essential requirements now.
ACORN INSULATED WIRE COMPANY, INC.
225 King Street, Brooklyn, N. Y.
LEICH SALES CORP., 427 W. Randolph St., Chicago
LINDSAY SUPPLY CO., 4815 Superior Ave., Cleveland

ELECTROX
BATTERY
ELIMINATOR

GIVES WORRY-FREE SERVICE

Operates direct from lighting circuit. Delivers constant, humless D.C. to operator's circuit on magneto switchboard. Power-off relay assures uninterrupted service in case of power failure. Low in cost! See your jobber, or write direct for full information.

SCHAUER MACHINE COMPANY
READING RD., CINCINNATI 2, OHIO

SINCE
1889
NATCO
CLAY CONDUIT
The proved and standard Protection for Underground Telephone Cables.
Cheapest in the long run. Highest quality and a full line of shapes.
National Fireproofing Corp.
201 E. Ohio Street, N. S.
PITTSBURGH, PA.

Virginia Holds Annual Meeting

(Continued from page 29)

and enforce peace among the nations of the earth, by not permitting any country to arm itself to the point of attempting to conquer the world, or indeed to conquer any other peace-loving nation. . . .

"These results can only be accomplished by public sentiment, and every patriotic citizen must use his influence in so molding the postwar public sentiment of our country, not only in our own country, but in all the great peace-loving democracies. The young generations must be taught these principles, and it must be the cornerstone policy of our government for many years to come. If public sentiment demands this, and continues to demand it, we need have no fear but that our country will be at all times not only in a position to protect and defend itself, but also, in concurrence with the other great democracies, to enforce world peace," Judge Norris declared.

John E. Sexton, Bristol, Tenn., general auditor, Inter-Mountain Telephone Co., gave an interesting and enlightening talk on "Taxes." Mr. Sexton discussed at length the present movement to eliminate double taxation of corporation dividends, stating that he hopes favorable action will be taken by Congress to correct the situation. He also criticized the current trend of municipalities assessing exorbitant gross receipts taxes upon utilities in order to obtain franchises. These taxes have been levied by some cities to help meet their huge expenditures, and, in this respect, Mr. Sexton said, "We as individuals and operators of telephone properties should not only expect, but should demand, the same economy in government as is expected in business." He paid tribute to the telephone trade journals in keeping the industry up to date on tax problems and urged wide reading of the magazines.

"Public Relations" was the subject of the address given by John Shaw, New York City, assistant vice president, American Telephone & Telegraph Co. Mr. Shaw referred to the marvelous record the telephone industry has made during the war in rendering efficient and up-to-date communication service despite the many difficulties resulting from wartime regulations and shortages of manpower, materials and equipment.

He warned his listeners that the public will demand the industry to continue its high-grade service in postwar years. He stated it was certain that the industry will meet any challenge facing it after the war. One subject of particular interest which Mr. Shaw discussed was that of the development of rural telephone service. In this connection, he said:

"In the vanguard of these activities to provide more and better service will be improvement in the service provided in rural areas and making the benefits of the telephone available to more families in our farm communities. Our industry recognized this need in the prewar period and it is going to be the first among our concerns in the postwar period too.

"Since 1935, half-a-million rural American families have been added to the list of those enjoying telephone service. Many thousands of miles of new pole lines had been added before the war stopped all such construction. Rural lines have been extended so that the postwar period will find service phyiscally available to two-thirds of our rural population, and most of the remaining third so located that it would require not more than a half-mile of pole line per family to give them service.

"The war interrupted an aggressive program of research into new and cheaper methods and materials designed to bring the service within reach of more rural homes and farms. Promotional campaigns were under way to bring the availability of the service to the attention of rural home-dwellers and to increase the usage of existing subscribers. As soon as the war situation permits, all these activities will be resumed with increased vigor. The possibilites of carrier systems and micro-wave radio systems as applied to rural service will again be considered. Carriers can be used to increase line capacity or can be placed on power lines to serve homes that are not too close to telephone lines."

In closing, the speaker stated:

"Whatever else we may think about these interesting but difficult times ahead—quite as abnormal as those we have been accustomed to for so many years—we must all agree that if we are to retain the goodwill that our industry has built up for itself among the people of America, we must call upon all the wisdom at our command properly to appraise public expectations. Then we must marshal all our ingenuity and skill to meet them. That

is the challenge of the future to all of us."

The climax of the convention came with the banquet, floor show, and dance, which were well attended and greatly enjoyed. Mr. McNish acted as master of ceremonies, and he introduced the new officers and directors of the association.

As a token of their gratitude of the work that President McNish had done for the association during his term of office, the members of the association presented him with a silver sandwich platter. USITA Executive Vice President Bailey presented the gift to Mr. McNish on behalf of the association members.

V V

Lightning Blitz Damages Telephone and Wire

Stories about the peculiar workings of lightning are as numerous as fish stories, but Leroy Bedessem, Cambridge, Wis., manager of the Commonwealth Telephone Co., tells one of particular interest.

"This particular blitz," Mr. Bedessem relates, "came right down through the middle of the largest elm tree on the farm and never touched a leaf. But it jumped from a wire on the tree to the telephone lines, destroyed the lightning arrester, burned the wire, ruined the telephone, knocked down two boys in the kitchen and kicked over a cow 100 feet from the tree, but did not touch a trailer standing next to it.

"The boys were not hurt, and the cow got up and walked away."

V V

AT&T Trains Soldiers and Sailors in Communications

Some 2,000 soldiers and sailors have been trained in certain specialized communications work during the past two years by the Long Lines Plant Department of the American Telephone & Telegraph Co.

For this purpose, nearly 100 separate schools, with courses averaging about seven weeks, have been conducted throughout the country. All of the training projects were designed to meet specific military needs, which the armed services, themselves, were unable to handle as quickly as required.

V V

Complete 35 Years' Service

MR. and MRS. ED BUDKE, who were in charge of the Farmers Mutual Telephone Co., Fort Atkinson, Iowa, for 35 years, resigned November 1. MRS. GRACE TEKIPP is now manager.

SUB-CYCLE

—A POWERFUL RINGING CONVERTER
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Will Deliver Long • Trouble-Free
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MADE IN 6 MODELS
Sub-Cycle is MADE IN 6 MODELS for loads from small P B X to large central office.

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On the other hand, Sub-Cycle embodies all the desirable characteristics of the Ideal Ringing Converter. It is built for heavy duty and produces a powerful ringing current, entirely independent of frequency variations in the commercial power supply.

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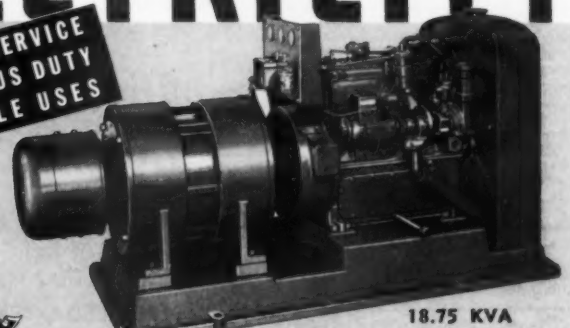

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Operator Warns Employes of Fire; Injured by Explosion

Mrs. Margaret Loney, telephone operator at the Oregon Shipbuilding Corp., Portland, stayed at her post November 6 during the company's $600,000 fire and relayed the alarm to approximately 50 employes on duty in the main administration building where the fire occurred.

Mrs. Loney left her position when a basement gas explosion blew her off her chair. She was injured, although not seriously, by acoustic plasterboard which struck her on the head. The 900-station telephone system of the yard, which went dead when the main, private branch exchange equipment was destroyed by the flames, was being restored by a crew of 30 engineers and installers working on a three-shift, round-the-clock basis.

Telephone equipment destroyed included a five-position dial switchboard, two teletypes and the 237 handset telephones in the building, with a total loss estimated by telephone company officials at "more than $50,000."

First step in restoration of telephone communication for the shipyard was the rapid installation of five trunk lines for 12 telephones used by top executives. Next came installations for fire reporting, the hospital and other priority needs.

Engineers rushed installation of a 300-line switchboard from Seattle, Wash., by truck which was intended only for temporary service.

About a week was to be required for full restoration of service, it was estimated.

V V

Appoint New Manager

MISS FLORENCE BICE recently was appointed manager of the Terry, Mont., exchange of the Mountain States Telephone & Telegraph Co. She succeeds MRS. MARION KNOX, resigned.

V V

$1,000,000 in Benefits Paid

Over a million dollars in benefits for military or naval service have been paid by the Illinois Bell Telephone Co. to employes on leave of absence in the armed forces during World War II.

V V

Ohio Bell Plans New Telephone Exchange

Plans to build a new East Side telephone exchange in Columbus, Ohio, as soon as materials are available, were announced October 24 by Paul W. Denning, district commercial manager for the Ohio Bell Telephone Co.

The new building will be constructed to house dial equipment for 7,000 telephones. Ultimately, it was said, the one-story building will be enlarged to provide facilities for 15,000 telephones. The cost of the project was set at $625,000.

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MacGillis & Gibbs Company, Milwaukee, Wis.—Northern White and Western Red Cedar Poles. Plain or butt-treated. Immediate quotations on request.

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WANTED: TELEPHONE LINEMAN. Give complete information as to age, experience, draft status, etc. Write to The Sussex Telephone Co., Box 253, Newton, N. J.

WANTED: CABLE SPLICER. To locate in Pennsylvania with company operating approximately 8,000 stations. Permanent position with satisfactory wages for qualified man. Give complete information in first reply, stating previous experience, draft status, etc. If presently working with an essential industry, statement of availibility will be necessary. Write Box No. 2105, c/o TELEPHONY.

WANTED: Telephone Accountant—qualified to supervise all phases of telephone accounting for Class A companies. Give full information as to age, experience, draft status, etc. Attach small photograph. Write Telephone Services, Inc., 16th Floor, Lincoln Tower, Fort Wayne, Indiana.

TRAFFIC MAN WANTED by Class A company in Middlewest. Prefer an experienced man who can do quantitative engineering but will consider inexperienced person with previous telephone experience. Permanent position. Good salary for man who can qualify. Furnish full details of experience, draft status, etc. Write Box 2106, c/o TELEPHONY.

HELP WANTED

WANTED: Agent for exchange in southern Missouri. Suitable especially for man and wife arrangement. Small modern living quarters in exchange building. Call or write Missouri Telephone Co., 15 S. Seventh St., Columbia, Mo.

FOR SALE

FOR SALE: One 32A32 Automatic Electric company step-by step 90 line switchboard equipped with 80 lines complete, 14 code ringing one to 10 party local connectors, three incoming connectors, wires for 10 trunks but no repeater equipment, ringing machine and reverting call switch, battery charge control equipment and complete power shelf equipped, less storage batteries and rectifier. This switchboard in service less than four years. Good condition. Reason for removal: War requirements, larger switchboard. Can be seen fully assembled in enclosed cabinet. Price reasonable. For immediate release, no priority required. Write The Norfolk & Carolina Telephone & Telegraph Co., 103 S. Road St., Elizabeth City, N. C.

FOR SALE: Magneto Exchange in prosperous extreme south central Minnesota. 227 telephones. Good condition. All metallic. Exceptionally fine for man who can repair lines, and wife who can assist as operator and have home in office building. Write Box 2123, c/o TELEPHONY.

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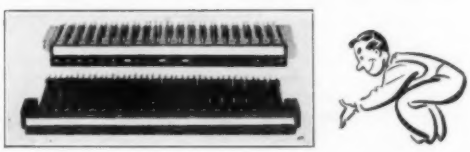

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BUCKEYE TELEPHONE and SUPPLY COMPANY
COLUMBUS 6, OHIO

Engineers Promote Use of Safety Observation Plan

Safety engineers of the Northwestern Bell Telephone Co. recently completed a series of meetings held at various points in its five-state area (Iowa, Minnesota, North Dakota, South Dakota, Nebraska), promoting the use of its safety observation plan.

This plan incorporaters procedures used over a period of years, covering the use of tools, materials and equipment. By observing unsafe practices and studying their underlying causes it was found that at every point where the system has been used for some time, a noticeable reduction in accidents has resulted. Sound films, covering "The Art of Climbing," "Ring Down the Curtain" and "Safety All Around," were used in advertising the plan.

V V

Bell Manager Receives Distinguished Service Award

The Cleveland Community Fund distinguished service award recently was presented to John A. Greene, vice president and general manager of the Ohio Bell Telephone Co.'s northeastern area.

Mr. Greene's citation reads: "For 25 years his marked ability as a leader, his sound judgment and tireless energy have strengthened the effectiveness of this community's welfare services. Having served as president of the Welfare Federation, 1940 to 1942, and as Division A chairman in the 1943 War Chest campaign, he continues his active interest in humanitarian endeavors."

V V

Telephone Helps Save Lives

Work of New York police in saving the lives of would-be suicides with a new manila rope net is coordinated by a portable telephone which has a 500-foot wire for use on tall buildings. When the net is in place, an observer on the street talks by telephone to the men in the building.

V V

Depend on Awakening Service

The Medical Service Bureau of Dayton, Ohio, managed by William H. Means, has approximately 200 subscribers who depend on the telephone service of the bureau to awaken them at specified hours so they get to work on time.

FOR SALE

FOR SALE: Fifty North Electric 505 multi-contact relays. "G" type coils. Excellent condition. Best offer takes. F.O.B. West Coast. Write Box No. 2125, c/o TELEPHONY.

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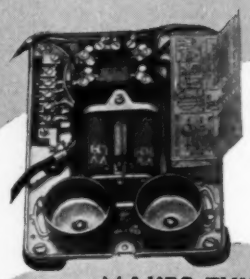

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